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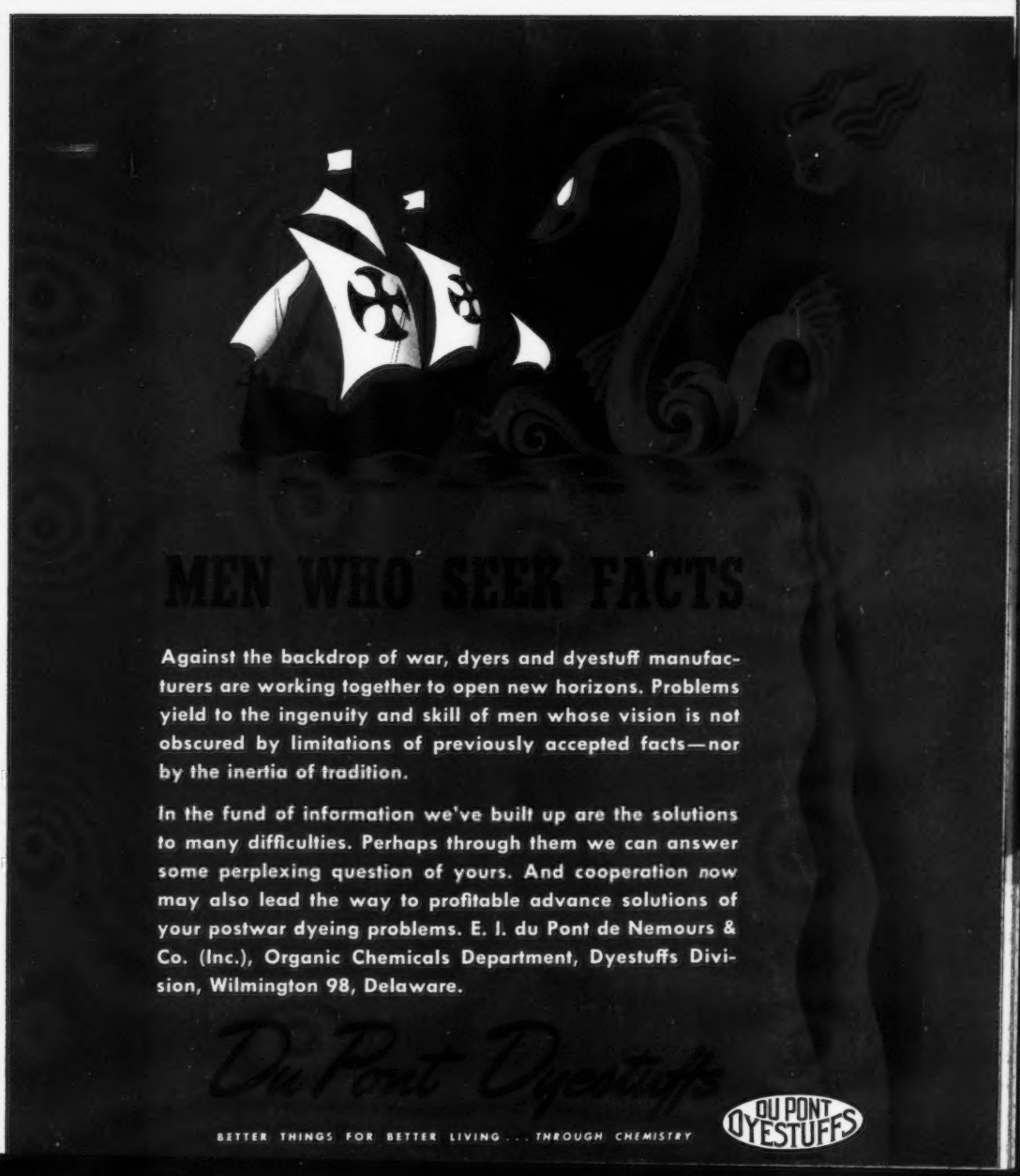
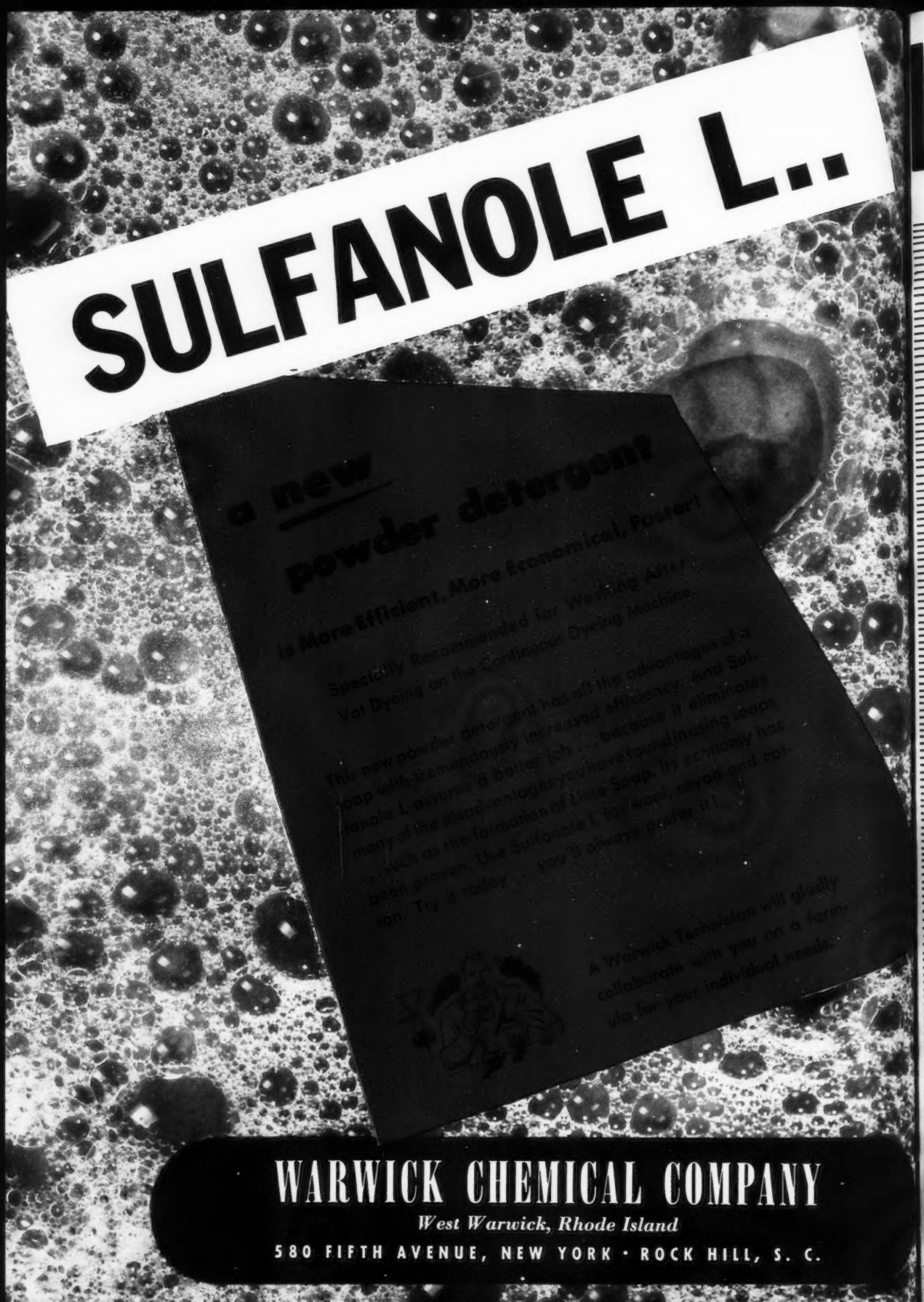
22, 1944
ME 33, No. 11

AMERICAN

DYESTUFF REPORTER

CIAL PUBLICATION
of the
PROCEEDINGS
ICAN ASSOCIATION
TEXTILE CHEMISTS
ND COLORISTS


MEN WHO SEEK FACTS
Against the backdrop of war, dyers and dyestuff manufacturers are working together to open new horizons. Problems yield to the ingenuity and skill of men whose vision is not obscured by limitations of previously accepted facts—nor by the inertia of tradition.
In the fund of information we've built up are the solutions to many difficulties. Perhaps through them we can answer some perplexing question of yours. And cooperation now may also lead the way to profitable advance solutions of your postwar dyeing problems. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyestuffs Division, Wilmington 98, Delaware.
Du Pont Dyestuffs
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY
DU PONT DYESTUFFS


SULFANOLE L..
a new
powder detergent
is More Efficient, More Economical, Faster!
Specially Recommended for Wash-Bag After
Vat Dyeing on the Continuous Dyeing Machine
This new powder detergent has all the advantages of a
soap with tremendously increased efficiency. And Sul-
fanole L assures a better job . . . because it eliminates
many of the disadvantages you have found in using soaps
. . . such as the formation of Lime Soap. By economy has
been proven. Use Sulfanole L for acpl, rayon and cot-
ton. Try it today . . . you'll always prefer it!
A Warwick Technician will gladly
collaborate with you on a formu-
la for your individual needs.
WARWICK CHEMICAL COMPANY
West Warwick, Rhode Island
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LEVELENE*

FREE FLOWING, NON-JELLING

More than a trade name.

A penetrant and levelling medium for direct, union, and CELANESE* dyes.

Effective either for stripping or for level dyeing when working with many of the vat type dyes.

A stable, dispersing penetrant for rotproof and mildewproof processing.

Economical and labor saving.

RATHER than ask for a laboratory sample—HAVE one of our technical men bring with him a sufficient quantity for a practical mill run. THEN judge for yourself as many mills have done and profited thereby.

*Reg. U.S. Pat. Off.

AMERICAN ANILINE PRODUCTS, INC.
50 UNION SQUARE — NEW YORK, N. Y.

— Dyestuffs —
Plant: Lock Haven, Pa.

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301 East Seventh Street

*Reg. U. S. Pat. Off.

Los Angeles, Cal. — 1019 South Grand Avenue

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ALUMINUM CHLORIDE ANHYDROUS

An Important
GOOD QUALITY CATALYST

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DESCRIPTION: Light gray colored solid

PURITY: Aluminum Chloride ..... 99% Minimum
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Heat of Solution ..... 550 calories/gram minimum

SIZE: COARSE—Largest lump not over one inch
FINE—Practically all passes #20 screen

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TEXTILE INDUSTRY:
Is important as a condensation catalyst or as a halogenation catalyst in preparing dyes, dye intermediates, antioxidants, and resins for treating fabrics.

HOOKER ALUMINUM CHLORIDE, ANHYDROUS serves as a catalyst in Friedel-Crafts reactions to produce by organic synthesis;

TEXTILE DYES **PHARMACEUTICALS**
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A complete line of finishes of exceptional merit for the production of hosiery to meet the most discriminating tastes.

Inquiries are solicited

ONYX OIL & CHEMICAL COMPANY
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See-Worthy legs are a business with me!

GLORIA BARDEAU

The young lady in front of the fireplace knows the importance of see-worthy legs. Says GLORIA—"With professional models, attractive legs are a business . . . with all women they're a necessity, for we know there's a direct line between feminine legs and male hearts. Under today's conditions, can you blame us for being critical in our hosiery buying?"

Whether she's out to stop the fleet or just part of it, every girl knows that "see-worthy" legs are an important part of her charm equipment. Stockings in rayon, cotton or lisle . . . all must have the proper, soft, sheer, eye-caressing, smoky dullness. ▬ Today, to make the job of glorifying the most beautiful legs in the world doubly difficult, materials are limited, while feminine demand and criticism is not. Never have we found hosiery makers and dyers more needful of finishes to create sheer, lasting, salable hosiery regardless of the materials used. ▬ To solve these problems, our staff has been working "'round-the-clock". A talk with one of our field men will convince you that we have not worked in vain.

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Phila., Pa., Solving Finishing Problems Since 1904
In the South, Howard A. Virkler, Greensboro, N. C.

ACID ALIZARINE ★ ACID ANTHRACENE ★ ALGOL ★ ALGOSOL ★ ALIZARINE

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Quality Dyestuffs

GENERAL DYESTUFF CORPORATION

FOUR-THIRTY-FIVE HUDSON STREET · NEW YORK · N. Y.

BOSTON · PROVIDENCE · PHILADELPHIA · CHICAGO · CHARLOTTE · SAN FRANCISCO

That fine lining in the officer's greatcoat—
chances are it's made of 'Spun-lo, Industrial's famous
"Continuous Process" yarn. Today it's keeping him comfortable,
wearing like iron, looking like a million dollars.

Tomorrow, he'll be wearing a new civilian ulster or topcoat to face the brave new world—and chances are that too will be lined with cloth made of 'Spun-lo Rayon. For this yarn is bound to be part and parcel of the textile future. And for good reason—no other method of rayon production is the equal of "Continuous Process" when it comes to uniformity, absence of knots and broken filaments, or level dyeing properties. That's why you'll see 'Spun-lo aplenty in the days to come. Keep your eye on 'Spun-lo.

Industrial
RAYON CORPORATION
MAKERS OF
"CONTINUOUS PROCESS" RAYON YARN
AND 'Spun-lo KNIT UNDERWEAR CLOTH

*Reg. U. S. Pat. Off.

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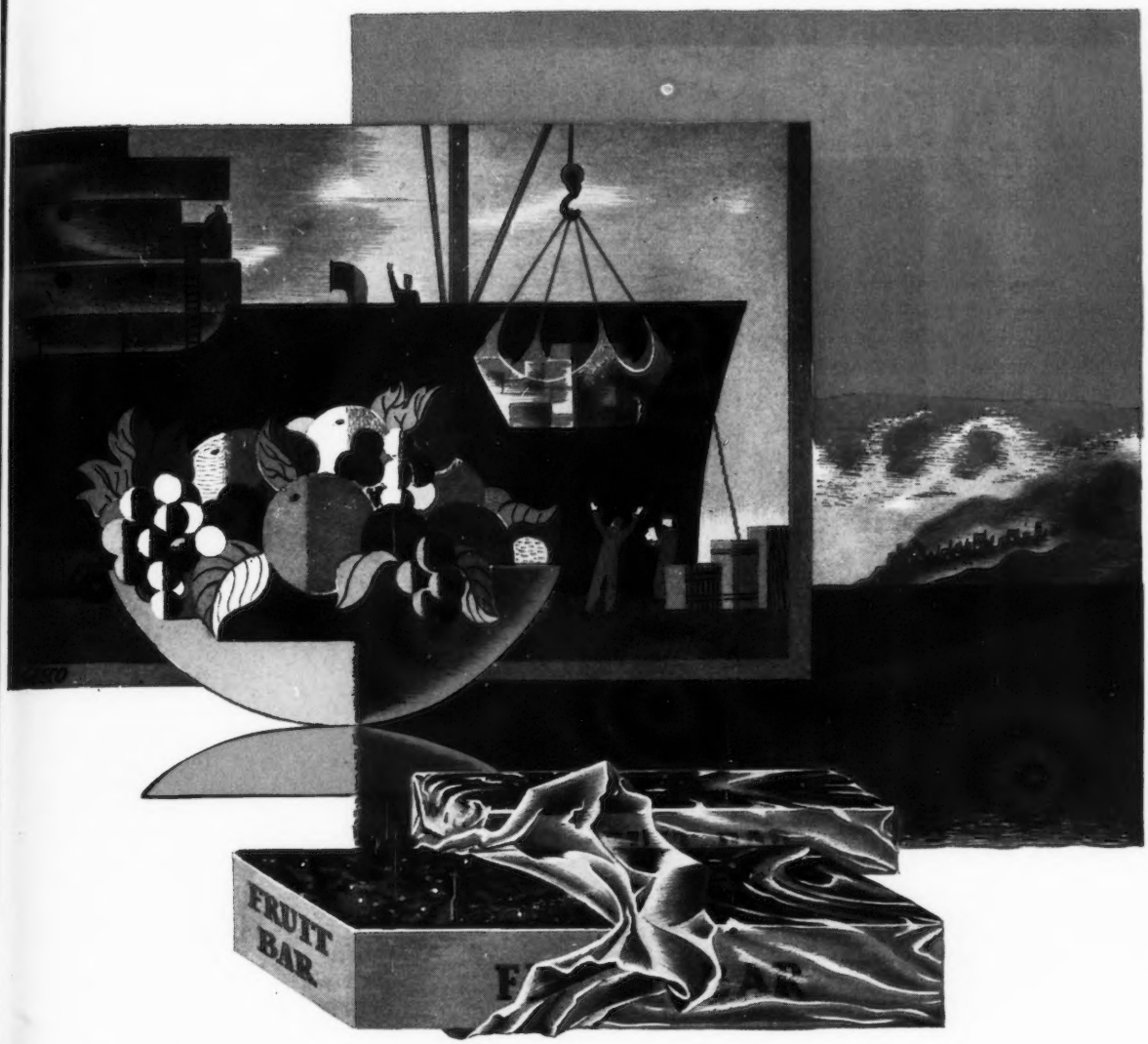


Sylvania Cellophane*

BRINGS FRUIT TO THE FIGHTING FRONTS

By releasing this page Ceglin Finish for Textiles makes it possible to present one of the many essential services being rendered by Sylvania Cellophane*

As components of Field Ration (Type-K) there is no telling when or where these fruit bars will go into action! But, *whenever* and *wherever* they do, they must be fresh, wholesome, tasty, satisfying and nourishing. Sylvania cellophane, in accordance with Army specifications to insure moisture-vapor-resistant wrapping, is used to preserve and protect contents.

SYLVANIA INDUSTRIAL CORPORATION
General Sales Office: **122 East 42nd Street, New York 17, N. Y.**
Works and Principal Office: **Fredericksburg, Virginia**

* Trade Mark Reg. U. S. Pat. Off.

Here's Your Answer to

WARTIME DETERGENT PROBLEMS

Quaker Chemical Research Produces a Broadly Effective Material to Meet Today's Needs

CHEMICAL RESEARCH—like that carried on day after day in the Quaker Laboratories—is accomplishing wonders in overcoming wartime shortages.

Many times newly developed alternates prove vastly superior to previous standard products. Consider the case of textile detergents . . .

Today, the available quantities of synthetic detergents are very limited, so textile men face the prospect of going back to conventional soaps . . . with their many imperfections.

New Type Detergent Needed

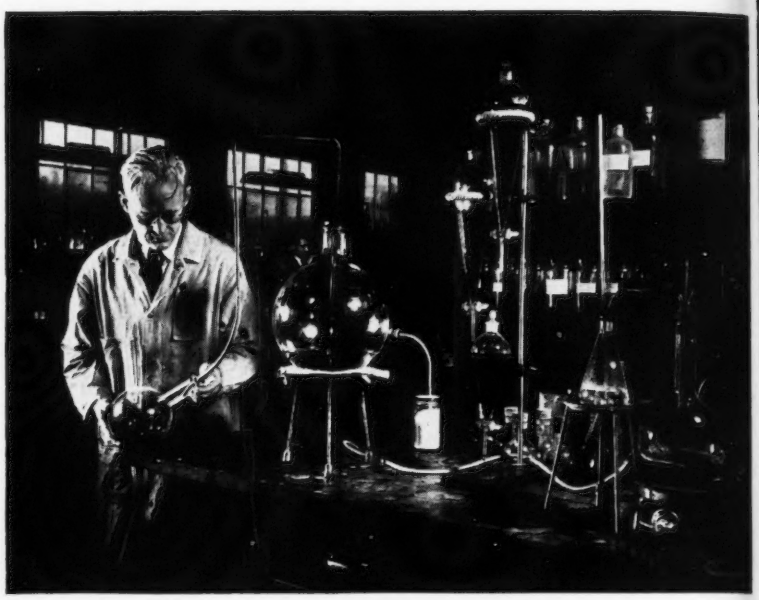
Some months ago we foresaw this possibility and sensed both the need and the opportunity for a *new type* of detergent. So the problem was turned over to our research staff with instructions to

1. Produce a material that embodies the best characteristics of a good synthetic detergent . . . at the applied cost of soap.
2. Produce this from raw materials that are available in large quantities.

In appraising the first part of this problem, we knew the principal imperfections of soap are slow wetting-out, difficult rinsing and poor stability to hard water. These objectionable features were overcome.

New Solvents Utilized

Since the advent of synthetic detergents, the solvent principle of cleaning has been neglected. So our laboratories blended a combination of new type solvents into this product to obtain maximum scouring effectiveness on oxidized oils, waxes, pectinous



A Corner of the Quaker Chemical Research Laboratory

matter and other hard-to-scour materials.

New Product Broadly Effective

The resulting product — called SCOURITE "S"—amply meets the rigid requirements set for it: SCOURITE "S" is made from non-critical raw materials . . . is powerfully effective, yet very mild . . . is economical to use . . . wets out quickly . . . turns out a first class scouring job . . . works at low temperatures . . . gives rapid results . . . does not affect colors . . . rinses freely . . . and insures level shades in dyeing.

Performance Proved in Use

Although our extensive equipment enables us to simulate mill conditions in our laboratories, we always insist that a new product be proved in actual production. So this new SCOURITE "S" was turned over to our Quaker Textile Process Engineers with instructions to "give it the works." They did . . . and from their reports we are satisfied that it does well the job for which it was created.

This product has proved excellent for—Scouring . . . Fulling . . . Soaping Off . . . Kier Boiling . . . Boil Off . . . and many other operations.

You can now obtain complete technical data on SCOURITE "S" upon request . . . and one of our Textile Process Engineers will be happy to sit down with you and talk about its place in your processing. Just write or wire—

QUAKER CHEMICAL PRODUCTS CORP.

CONSHOHOCKEN, PA.

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WAREHOUSE STOCKS IN PRINCIPAL INDUSTRIAL CENTERS

Floral Prints

ARE NOW IN FASHION

— but as *ALWAYS*

KELTEX

Belongs In The Picture!

Whatever the print fashions may be, the modern thickening agent, KELTEX, is always in fashion among leading modern print plants. That's because KELTEX assures exceptional results and at the same time is extremely low in per unit cost of finished goods.

KELTEX produces extraordinary color yield and penetration. It is very easily removed with a light rinse. It does not scratch the rolls or mark off in the washer.

KELTEX is easy to handle — simplicity itself to use — requiring no boiling, filtering or other special handling. Convince yourself. Try KELTEX.

KELTEX
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REFINED ALGIN PRODUCT

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GARGOYLE WOOLREX OILS GIVE YOU...

Multiple Benefits for Carding, Spinning and Scouring!

PROVED through the years in many mills, these Gargoyle wool oils are uniform in quality.

They're self-emulsifying, easy to apply and economical to use

Manufacturers report that these oils have many advantages for both carding and spinning operations. They are easily removed in normal scouring operations, using conventional soap solutions.

Read the list (right) for some of these benefits. Then call your Socony-Vacuum representative and get these advantages in your wool processing.

FOR CARDING:

- ✓ Excellent penetrating, spreading and lubricating qualities.
- ✓ Freedom from gum-forming tendencies helps reduce fibre breakage to a minimum.
- ✓ Card runs increased over those when conventional oils are used.

FOR SPINNING:

- ✓ Give high yarn strength.
- ✓ Reduce "ends down" and thus help increase production.

FOR SCOURING:

- ✓ Easily removed in conventional fulling and scouring operations.
- ✓ In practical plant operations, it is possible in many instances either to eliminate or substantially reduce the amount of soap added in the washer.

GET THE FACTS ABOUT ALL OF THESE PROCESS PRODUCTS FOR TEXTILE MILLS:

GARGOYLE WOOLREX OILS: Self-emulsifying wool oils. Excellent qualities for carding, spinning and scouring

S/V FABRISEC AA AND MP: Highly concentrated Provide maximum water repellency with minimum amounts

S/V WORSTEX OIL: Self-emulsifying oil, resistant to oxidation and easily scoured. Recommended for French-type worsted weaving yarns.

S/V TEXTILE FINISHING OIL: Many applications, including warp sizing, plain softening, starching and pre-treatment of cotton cloth before Sanforizing or Pre-shrinking.

S/V RAYON SOAKING OILS: Used with gelatins and glues for soaking viscose, other rayon yarns.

S/V FIBRE OIL A: Particularly adaptable for batching cordage fibre. (Jute, sisal, hemp, etc.)

Process Products
SOCONY-VACUUM

SOCONY-VACUUM OIL CO., INC.

Standard Oil of New York Division
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These products available subject to national wartime requirements

in WAR or PEACE

ARKANSAS PRODUCTS *Serve Dependably*

FUNGICIDE: A mildew proofer made in various types to meet all government specifications.

ARKO FIRE RETARDENT: For flame-proofing uniform cloth, felt and all types of rayon and cotton fabrics including theatrical drapes.

***AQUAROL:** A water repellent for uniforms, overcoatings and other military fabrics; also all civilian garment cloth.

***PARAMINE:** A cation active softener for processing cotton and rayon cloth to obtain a soft, smooth, pleasing finish.

***ALGEPON P.:** A retarding agent for vat and sulphur dyeing to prevent premature oxidation of the dye-stuff or in other processes when necessary to retard exhaustion to obtain a uniform shade.

***PARAPON S. A.:** A highly efficient leveller and softener used in dyeing and finishing all types of viscose and acetate rayon. Excellent for processing tricot cloth.

ARKOLA G.: For finishing rayons to impart a full, better feeling hand and additional weight. An excellent substitute for glycerine for printing and finishing.

***CULOFIX:** Used as an after treatment in last rinse to prevent bleeding of direct dyed cotton or rayon in water.

***DIAZONOL A. C.:** For boiling out cotton cloth in pressure or open kiers to produce greater absorbency and cleaner material. Excellent for preboiling knitted cloth in preparation for chlorine bleach. Also used with good results for boiling out cotton or rayon cloth in the jig.

And a Complete Line of Oils, Chemicals, Softeners and Finishes
For Wet Processing All Textile Fibres

*Reg. U.S. Pat. Off.

ARKANSAS CO. INC., NEWARK, N. J.

Established 40 years

U-BOAT DEUTSCHLAND ARRIVES WITH CARGO OF DYESTUFFS AND CHEMICALS

German Submarine Unarmed– Declared to be 'Trader', Not Man of War; No Internment Planned, Says Sect'y Lansing

BALTIMORE, JULY 10, 1916 – Out of the mists in Chesapeake Bay late last evening, the large German submarine Deutschland docked this morning with a cargo of precious dyestuffs and intermediate chemicals vitally needed by American textile mills. The first "underseas delivery" of a commercial cargo includes [illegible] tons of essential dyes as well as other valuable

One of the few existing news photos of the Deutschland arriving in Baltimore Harbor on July 10, 1916.

Though the Germans intended to show they could run the British blockade, actually the voyage dramatized the need for a self-sufficient American dyestuffs industry. Contrast the importance of 500 tons of dyestuffs then, with the availability of dyestuffs today in the midst of an infinitely larger global war.

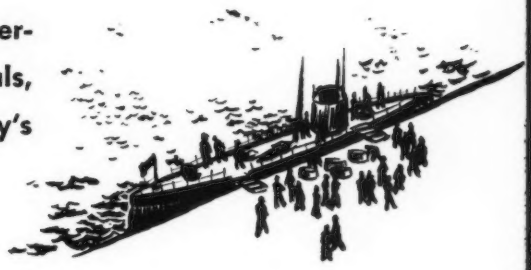
What Didn't Repeat

It took a world war to free America from its dependence upon dyestuff imports. In fact, the greatest economic gain of World War I was the development of the American chemical and dyestuffs industry.

Today our dyestuffs industry is providing an ample supply of fast dyes for every military and essential civilian need.

This despite the unprecedented need for military textiles to clothe an army already four times larger than the A.E.F. of 1917-18. This despite unexpected demands of Lend Lease . . . and the unrationed desires of a civilian population grown a third larger with a cash income three times greater!

As a leading producer of dyestuffs, intermediates and synthetic organic chemicals, National is proud of its part in the industry's unprecedented growth.



NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET NEW YORK 6, N. Y.

BOSTON PHILADELPHIA GREENSBORO CHATTANOOGA
PROVIDENCE SAN FRANCISCO ATLANTA PORTLAND, ORE.
CHICAGO CHARLOTTE NEW ORLEANS TORONTO

Ideas for your Notebook.. from CARBIDE AND CARBON CHEMICALS CORPORATION

"Tergitol" Penetrants are powerful wetting agents...

Have you investigated these detergents in your operations?

THE chemical stability of "Tergitol" penetrants permits them to be used under conditions where many wetting agents break down. All "Tergitol" penetrants are sufficiently soluble in commercial solutions of acids, alkalies, or salts to give rapid wetting action. These penetrants are effective in hard water, because they form water-soluble calcium and magnesium salts. They also aid in the dispersion of lime soaps, thereby reducing the formation of curds in hard water. Some specific uses in textile operations are outlined at the right.

To meet the wide variety of conditions encountered, there are *three* "Tergitol" penetrants from which you may choose the one best suited to your particular operations. It is important to base your choice on the content of dissolved materials rather than on the pH value of the solution.

"TERGITOL" PENETRANT 7 . . . sodium heptadecyl sulfate . . . a wetting agent of general utility—for use in solutions which contain a low concentration of dissolved materials; that is, less than 1.0 per cent of acids, alkalies, salts, dyestuffs, or starches. Under such conditions, it is one of the most powerful of the commercial wetting agents. Most of the production of this material is reserved for war-essential uses.

"TERGITOL" PENETRANT 4 . . . sodium tetradecyl sulfate . . . is a superior wetting agent in moderately concentrated solutions. In those containing 1 to 5 per cent dissolved acids, bases, or salts, "Tergitol" penetrant 4 has been found to be most effective.

"TERGITOL" PENETRANT 08 . . . sodium ethylhexyl sulfate . . . Because of its greater solubility, chemical stability, and penetrative action in very strong acid or alkaline solutions containing more than 5 per cent of dissolved materials, "Tergitol" penetrant 08 is a remarkable assistant in mercerizing, carbonizing, and other applications involving high concentrations of dissolved materials.

Which "Tergitol" Penetrant Can You Use?

Kier-Boiling . . . In addition to rapid wetting in tightly packed kiers, a uniform boil-out and an even bottom are produced when "Tergitol" penetrant 7 is used.

Mercerizing . . . Only 0.1 per cent of "Tergitol" penetrant 08 promotes rapid mercerizing of dry, grey stock and induces desirable shrinkage characteristics. It withstands the rigorous treatment encountered during concentration of used mercerizing liquors.

Bleaching . . . "Tergitol" penetrant 4 is stable in hypochlorite and peroxide bleach liquors and is not exhausted readily. It permits bleaching without preliminary boiling-out.

Dyeing . . . Less than 0.1 per cent (of the bath weight) of "Tergitol" penetrant 7 not only uniformly wets out the fibers in the dye bath, but also aids in evenly dispersing the dyestuff itself. Intensified colors as well as rapid and level dyeing are obtained.

Scouring . . . "Tergitol" penetrants are good detergents and enhance the action of the alkaline solutions used in scouring.

Carbonizing . . . "Tergitol" penetrant 4 effects uniform absorption of acid or aluminum chloride by wool. It will not decompose, vaporize, or stain during the drying and baking, and does not cause injurious after effects.

Sizing . . . Starches are more readily dissolved in water containing "Tergitol" penetrant 7. The resultant size will impregnate evenly and rapidly. "Tergitol" penetrant 7 remains in the size, thus assisting in the subsequent desizing and dyeing.

Finishing . . . "Tergitol" penetrants are used in resin dispersions for permanent stiffening, water-proofing, anti-slip characteristics, pigment-coloring, and flame-proofing. They are helpful in gaining rapid, uniform penetration of mildew-proofing solutions.

For further information on "Tergitol" penetrants, write:

CARBIDE AND CARBON CHEMICALS CORPORATION

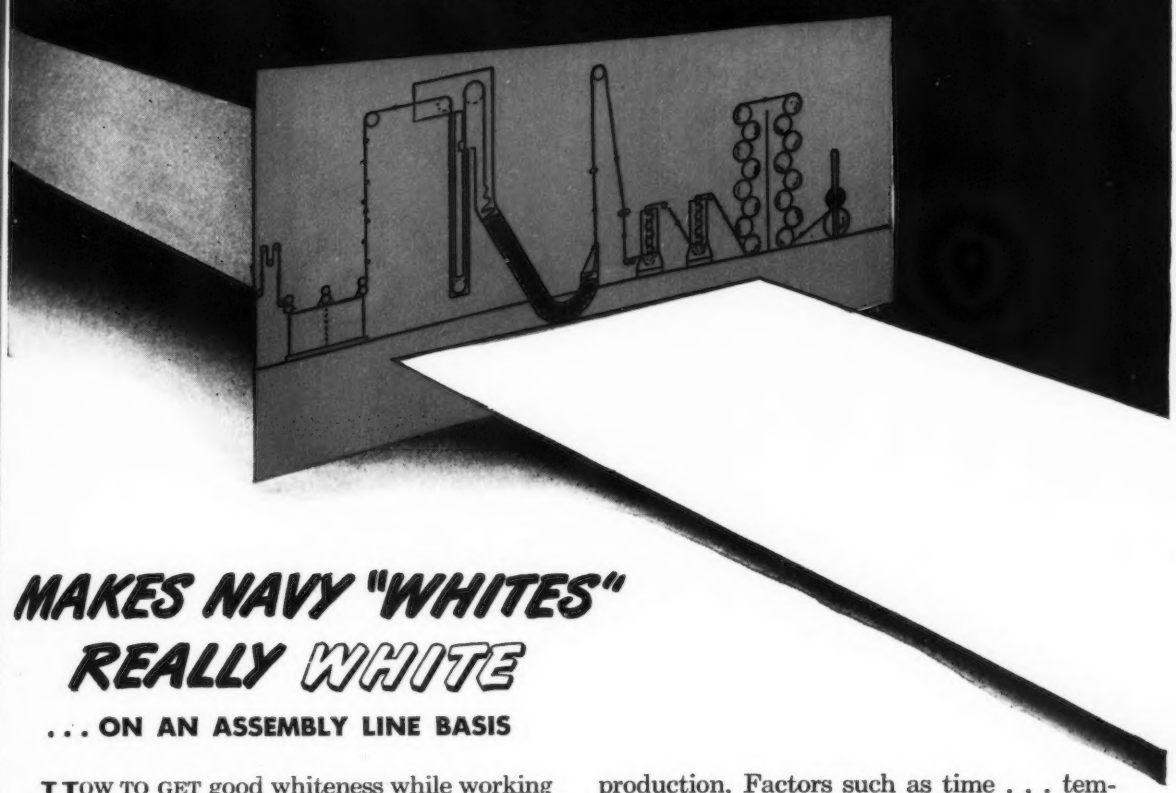
Unit of Union Carbide and Carbon Corporation

30 East 42nd Street UCC **New York 17, N. Y.**

PRODUCERS OF SYNTHETIC ORGANIC CHEMICALS

The word "Tergitol" is a registered trade-mark of Carbide and Carbon Chemicals Corporation.

DUPONT *CONTINUOUS* PEROXIDE BLEACH



MAKES NAVY "WHITES" REALLY WHITE

. . . ON AN ASSEMBLY LINE BASIS

HOW TO GET good whiteness while working at wartime speed. That's the problem in bleaching Navy twills.

Du Pont recommends Continuous Peroxide Bleaching. Du Pont has developed through research and field experience a continuous process for this which it offers to the trade.

This peroxide bleaching process turns material from grey to white in two hours—instead of the customary eight to fourteen under the batch bleaching method. It is flexible, permitting a quick change from one fabric to another.

The continuous process is more than just the speedy way to bleach. It is the economical way—costs of chemicals, steam, water, are lowered.

Continuous operation allows specifications to be met while maintaining high rates of production. Factors such as time . . . temperature . . . speed . . . are under control. And each yard gets the same treatment throughout. Result: the finished bleached twill is entirely uniform.

Using designs patented by Du Pont, recognized manufacturers of textile finishing machinery are building the necessary equipment. For additional information on the use of peroxides in continuous bleaching, write to E. I. du Pont de Nemours & Co., Inc., Electrochemicals Department, Wilmington 98, Delaware.

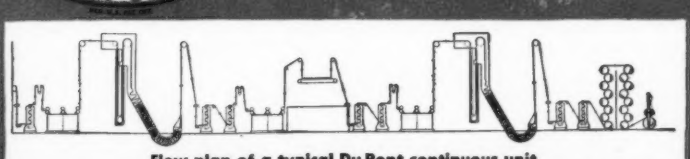
✓ THESE FEATURES

TWO-HOUR BLEACH — **HIGH QUALITY**
ECONOMICAL — **UNIFORM BLEACH**
FLEXIBLE — **CONTROLLED**
MINIMUM SECONDS AND REJECTS

DU PONT

DU PONT PEROXIDES

Better Things for Better Living . . . Through Chemistry



Flow plan of a typical Du Pont continuous unit

DEPEND ON DIAZYME

✓ Thorough desizing

✓ For better dyeing

✓ For level shades

A HIGHLY efficient, concentrated, powder desize for fibres and fabrics that insures a more level and uniform dyeing. It increases the absorption of the fibres so that dyes and finishing materials penetrate more readily and evenly.

Diazyme contains a combination of enzymes that attack the various sizing compounds now used (starch, dextrine, gelatine, glue, etc.), and leaves the materials soft and elastic. Cannot weaken fabrics, safe for even the most delicate fibres.

Diazyme is concentrated—one part equals about 8 parts liquid, or 4 parts solid, of other well-known desizing agents. This concentration furnishes a definite saving, not only in freight charges but in storage space.

Diazyme is furnished in different strengths as well as prepared with special stimulating agents for individual purposes.

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.
OTHER PLANTS: CARLSTADT, N. J. • LOS ANGELES, CALIF.
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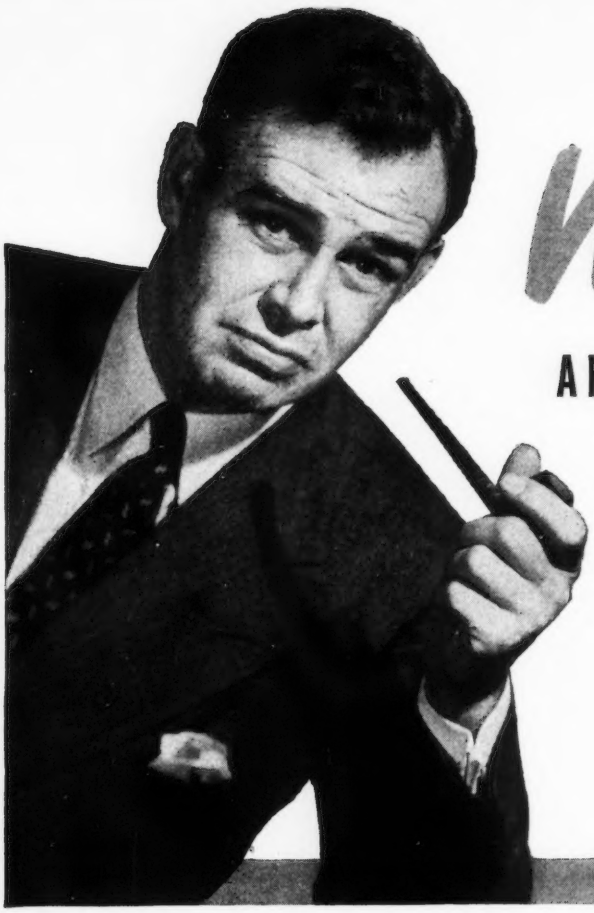

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PROCEEDINGS OF THE
American Association of Textile Chemists and Colorists

MAY 22, 1944

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Members should notify the **Secretary** immediately of all address changes.

"OLNEY NIGHT" AT MEETING OF NEW YORK SECTION

LOUIS A. OLNEY HONORED

At Meeting of New York Section

THE meeting of the New York Section, held on April 21st at the Downtown Athletic Club, New York City, was designated as "Olney Night" to honor Dr. Louis A. Olney, President Emeritus of the national association and chairman of its research committee. The date of the meeting coincided with Dr. Olney's seventieth birthday. Unfortunately, the guest of honor was unable to be present due to illness but the following message from him was read by P. J. Wood:

MESSAGE FROM DR. OLNEY

To the Officers and Members
of the New York Section:

The thoughtfulness of the officers and members of the New York Section, in planning for a special recognition of my seventieth birthday is greatly appreciated. It was very kind of you, and while I deeply regret that I am unable to enjoy it with you, the thought of it has added greatly to my pleasure of the day.

Had I been fortunate enough to enjoy your hospitality this evening, I intended to sketch a few of the developments in the textile industry which it has been my pleasure and privilege to witness and participate in to some extent. As it is, I will merely mention them and leave the detail to possibly some other time.

The first year after my graduation from Lehigh University, I became an instructor in Brown University. Professor Appleton, who was then in charge of their chemistry department, told me that because Providence was such a great textile center, he had always wanted to introduce into their curriculum a course in textile and dyestuff chemistry, and he delegated me to devote all of my time to such a project. It was this first assignment that led me into the line of work which I have followed for nearly fifty years.

Among the developments of this period were:

Introduction of the naphthol dyes.

Transition from natural to synthetic indigo.

Development of the sulfur dyes.

Discovery of Indanthrene Blue, followed by the development of the valuable range of vat dyes, including the more recent solubilized vat dyes.

LOUIS A. OLNEY
President Emeritus
Chairman of Research Committee
Director of Research

The meta-chrome process of wool dyeing.

A decided revolution in textile printing processes.

Many others of less significance.

With the advent of the modern textile auxiliaries, the whole process of cotton and rayon finishing has been revolutionized.

The many resin finishes, durable softeners, water repellents, mildew repellents, moth preventatives, fire retardents, to say nothing of the processes of mercerizing and Sanforizing, have involved the old time finisher in a whirl of scientific terms, chemical formulas and "what not" from which he would have been scarcely able to emerge except for the assistance of well trained textile chemists.

About 1902 one of my evening students presented me with a small skein of yarn which he said came from abroad and was known as "wood silk." It apparently was one of the first attempts to manufacture what we now call viscose rayon. At this time it was looked upon more or less as a laboratory curiosity, but nevertheless it was a gesture of what was to come later.

The first viscose rayon was not manufactured in this country until 1910. At that time the whole world's production of rayon was 17,000,000 pounds and less than 1,000,000 pounds in the United States. Cotton and woolen manufacturers rather made light of "artificial silk" as it was then called. They said it might replace silk to some extent but never cotton, and as for replacing wool, why that was just a joke. Little did they realize during the year 1944 656,000,000 pounds of rayon would be used in the United States, an amount somewhat greater than the total number of pounds of wool consumed; during that same period that some cotton mills would be running almost entirely on rayon; and some worsted mills using as much rayon as wool.

You are so well acquainted with the history of the A.A.T.C.C. during the twenty-three years of its existence, that I need not go into that at this time.

Of course it has taken a lot of time and effort, but the satisfaction of seeing the association grow from year to year has much more than repaid me for any sacrifice of time or energy I may have made.

Furthermore, it has not been the effort of anyone alone, or of even a few, but the wholehearted and untiring efforts of a vast number of officers, committee chairmen, and individual members, that have made it possible for the association to develop as it has and to them should go the credit.

It has been a great pleasure and satisfaction to have witnessed, and participated in these many occurrences of the active period of my life, and to have watched them develop from year to year.

What will the next fifty years bring forth for the textile and allied industries? It would seem scarcely possible that such remarkable strides could continue unabated, but who can tell? It will be up to the coming generation of young chemists and technicians to say.

The generation to which I belong has at least been instrumental in opening the way.

It will be up to the younger men to carry on, but I hope to be able to watch you and possibly do a little coaching from the sideline for a few years to come.

In closing I again wish to express my appreciation of your plans to honor me upon this happy occasion, and offer my keenest regrets for not being able to enjoy the evening with you and meet you all personally.

L. A. OLNEY

OLNEY MEDAL AWARD

The next speaker was William D. Appel, president of the association, who spoke on the Olney Medal Award. Mr. Appel's remarks follow:

Mr. Appel: I need not tell you what Dr. Olney has meant to textile chemistry, dyeing and finishing in this country, and to all who have come in contact with him: all of his students, all of the many people who have come to him for advice and inspiration, all of the members of this association.

There is a great satisfaction in knowing you have lived a life of high ideals, made many friends, contributed to many worthy causes and created new values in the world. Perhaps even greater is the satisfaction of knowing that your efforts are appreciated by your contemporaries.

The Olney Medal has been endowed as a testimonial to Dr. Louis Olney in recognition of his lifetime of devotion and multitudinous contributions to the field of textile chemistry. Further, its purpose is to encourage and to afford public recognition of outstanding achievement in, or contribution to, that field. Our association is indebted to the Howes Publishing Co., Inc., for endowing this award. We hope that the satisfaction Mr. A. P. Howes derives from the giving of this award may be as great as that of Dr. Olney for whom it is named and as great as the inspiration it will undoubtedly bring to the recipients down through the years.

The committee of award has been established in accordance with the general regulations agreed upon by the Howes Publishing Co., Inc., and this association. It met today and is ready to consider nominations for the award. Any senior member of the association may make such nomination by letter to our secretary, Dr. H. C. Chapin. The letters must be received not later than August 31st to be considered for an award at the annual meeting this year. Full information about the award was published in the American Dyestuff Reporter for November 8, 1943.

We urge you to think about this and get your nominations in to us.

* * *

EXECUTIVE COMMITTEE ON RESEARCH

The next speaker was Leonard Little, chairman of the Executive Committee on Research. Mr. Little's remarks follow:

Mr. Little: Speaking for the members of the Executive Committee on Research, I wish to express our appreciation for the privilege of being intimately associated with Dr. Olney whom we are gathered here to honor. We all join with you in our very best wishes for his early recovery.

Under the able leadership of Dr. Olney, who has been director of Research since the inception of our association, the A.A.T.C.C. has achieved a record of real accomplishment. For twenty-two years an ambitious program of research has been carried on largely in the development of quality standards and testing methods for the Textile Industry. Prior to the work of the various A.A.T.C.C. Research Committees there were no recognized national standards and great confusion existed from the wide variations between the performance of textile fabrics in actual use and the broad quality claims made under numerous labels and branded names.

The General Research Committee has grown to a membership of nearly 60 men, who represent a cross section of the entire Textile Industry. The members of this committee are recognized as the most outstanding group of textile chemists and technicians that have ever been brought together in this country. This Committee has been sub-divided into some 37 subcommittees each of which was assigned a specific study in the endeavor to establish quality standards in textiles.

More than fifty of the best equipped textile laboratories have cooperated in the work of the above committees furnishing the use of their equipment and personnel without charge to the association. In one year 61 meetings were held by the 37 subcommittees. The value of this concentration of scientific effort to the Textile Industry is incalculable. If A.A.T.C.C. had actually been required to pay for all of this research, it would have amounted to a figure many times our newly approved research budget.

The Need for Reorganization of the Research Set-up Is Definite

The First and most important reason for reorganization is the fact that Dr. Olney who has so efficiently assumed the responsibility for leadership in our Research work now feels that he must be gradually relieved of that responsibility.

Secondly, under our present system too great demands are made on too few individuals for the carrying out of research work. We need to encourage more of our members, especially our younger members, to assist in the research program.

A third factor is the need of a paid research organization at a central point to supplement and speed up the work of the various sub-committees as well as to assume responsibility for the successful establishment of new and revised standard test methods.

Fourthly the assignments of sub-committees should be spread over a broader area so that each section takes an active part in furtherance of the research work of the association.

Finally since there are at least ten other technical organizations, in addition to the A.A.T.C.C., in the field of Textile Research there is greater necessity than ever for the A.A.T.C.C. to so organize as to be sure that it maintains its position of leadership in *its chosen field.*

The Executive Committee on Research consists of Thomas R. Smith, our ex-president; William D. Appel, our present president; P. J. Wood, a former president; Professor Louis A. Olney, our Director of Research; J. Robert Bonnar as secretary and myself as chairman.

The Executive Committee on Research is responsible for the general research policy of the Association, for the organization and the operation of the employed research staff, including the Director of Research, when a full-time paid director is appointed. The committee has the responsibility for the appointment of the members of the Research Committee and the various sub-committees working under it.

Research Objectives Are Positive

One of the main objectives of the A.A.T.C.C. is to carry out in a practical way research work of vital importance to the Textile Industry, and only by so doing can the A.A.T.C.C. take its rightful position and become the authority we desire it to be.

It is felt that the focus of our research should be primarily, but not exclusively the establishment of standard test methods for textiles, which should have a two-fold use; namely, practicability to our own members as far as their own work is concerned and adoption by industry and the public where finished textile fabric test methods are involved. The latter will be achieved only through a general publicity arrangement. If we reach this goal of being the authority for standard test methods for textiles, we feel that other associations will turn their research efforts in other directions, rather than investigate such problems which naturally fall within the scope of our pronounced research endeavor.

The Permanent Research Organization

It is a necessity that the A.A.T.C.C. have a Director of Research on a paid basis, at such a salary that we can command full-time services of a satisfactory man, that is, satisfactory from the viewpoint of

his technical background and general acceptance both within and without our own organization. This man will devote his entire time to the research activities of the Association and be responsible to the Executive Committee on Research.

To accomplish the immediate execution of research projects now contemplated we propose to set-up under our assistant director of research Mr. Ryberg, an assistant and several laboratory and clerical workers.

Sub-Committees

These committees are being reorganized with the following objectives in mind:

1. Division into Active and Reference Committees.
2. Active Sub-Committees to recommend their own chairmen and elect a secretary for each committee.
3. A *different chairman* for each Active Sub-Committee.
4. *No member* on more than three Active Sub-Committees.
5. *Chairmen to serve not* over three years successively.

Advisory Committee On Test Standards

Before even a tentative test method is adopted suitable arrangements are to be made to contact other recognized organizations interested in the test at hand for their criticisms, constructive or otherwise.

It is felt that the question of labeling textile fabrics and the terminology to be used in the grading of fabric qualities, provided they are not considered chemically inaccurate or misleading, is not an A.A.T.C.C. function. It is also felt that actual gradation points in classifying relative qualities of fabrics such as whether a fabric is storm, rain or drizzle resistant is the function of the merchandising group in the industry and not a function of the A.A.T.C.C. Conversely it is the function of the A.A.T.C.C. to establish satisfactory standard test methods, whereby gradations can be readily established.

Fellowships and/or Scholarships

A public statement is to be made that Fellowships and/or Scholarships are acceptable to the A.A.T.C.C. at approximate price of $1,500 per year and up, depending on quality of personnel needed and amount of equipment involved.

Financing the Profound Budget

The New York Section has made a spot check through its corporate membership committee working with Henry F. Herrmann, the General Chairman, and feels confident that the budget of $35,000 annually can be raised through an active corporate membership drive. If each section can raise a sum equivalent to $15 per member annually the drive will go well over the top. We feel in our section that we can raise somewhat more than our quota of something over $10,000 based on 707 members.

Success of the New Research Program

No one person nor any one committee can make our new program a complete success. It will require the keen interest and support of every section of the association. We propose to step up and broaden our Research activities to interest more and more of our members especially many of our younger members. We propose to set up separate projects for the establishment of new or revised standards and test methods for textile materials so that each section can sponsor one or more such projects. This may be done through sub-committee work or by the committee working in collaboration with a local institution as seems best under authorization of the Executive Committee on Research. At some later date it may be advisable to secure a more centralized location for our main research headquarters. At present we can continue effectively at Lowell taking into consideration the man power shortage due to war conditions.

We are all proud of our association. We certainly shall insist that it go forward to the accomplishment of greater and better things. We are all inspired by the accomplishments of our members in the armed services. We are happy that we have been able to make a substantial and worthwhile contribution especially to the Quartermaster Corps of the various branches of the Army and the Navy.

I know that the Executive Committee on Research can count on your full and hearty cooperation in building a Research Program which will get results of which we all may be justly proud. We look forward to great things to be accomplished in A.A.T.C.C. Research with the continued advice and guidance from our dearly loved Prof. Olney for years to come.

* * *

ANNUAL MEETING

Boyce C. Bond, chairman of the Philadelphia Section, announced that plans were underway for the annual meeting to be held at the Hotel Claridge in Atlantic City on October 12th, 13th and 14th. He stated that members should watch the AMERICAN DYESTUFF REPORTER for future announcements.

Kenneth H. Barnard, chairman for the Intersectional Contest, announced that the contest would be held on Friday evening, October 13th. He emphasized that the main reason for holding an annual meeting was because of the benefits to be derived from the technical program and the opportunity it afforded to exchange and get new information.

The main speaker of the evening was Henry F. Herrmann, whose subject was "Dyes and Chemicals in Post-War Planning." Before starting his prepared address he made the following remarks:

Mr. Herrmann: Before starting on my address, I would like to pay personal tribute also to Dr. Olney. It is a pleasure to speak of a man before he has passed on to his reward, and it is a wonderful thought that his large family of something like 3,000 "sons" are thinking of him tonight. Those of us who have one or two or three can imagine the thousand-fold thrill in the idea that we have so many well-wishers.

Dr. Olney is in deed and in fact the father of this association. We who love it and have worked for it appreciate the pioneer work that he has done. His foresight, his tact, his energy, and his executive ability have made it seem so easy and natural for those who have worked with him to each do his appointed task. A meeting such as this is even more of a tribute when we consider that there are eight such sections functioning throughout the country.

* * *

Patrick J. Kennedy, chairman of the New York Section, appointed P. J. Wood chairman of the nominating committee and announced that the election of officers would take place at the next meeting, to be held at the Downtown Athletic Club on June 9th.

The attendance was about 300.

Respectfully submitted,
NORMAN A. JOHNSON,
Secretary.

MEETING, PIEDMONT SECTION

THE Piedmont Section will hold its Summer meeting at the Robert E. Lee Hotel in Winston-Salem, North Carolina on June 17, 1944.

R. B. MacIntyre, sectional committeeman and representative of the National Oil Products Company, Franklinton, North Carolina, will be in charge of the program, details of which will be announced at a later date.

Malcolm Campbell, dean of the Textile Department at North Carolina State College will be the principal speaker at the banquet. This occasion will be Dean Campbell's first address to the Piedmont Section and his address will be timely and of considerable interest.

Hotel reservations should be made direct to the Robert E. Lee Hotel. Banquet reservations should be made with Leland G. Atkins, Secretary, Southern Dyestuff Corporation, Charlotte, North Carolina.

A. R. THOMPSON, JR.
Publicity Chairman.

Dyes and Chemicals in POST-WAR PLANNING*

HENRY F. HERRMANN

General Dyestuff Corp.

A FEW short months ago the terms "V Day," "R Day" and "AD 194Q" in various modifications were bandied about very freely, the underlying thought having been that the end of the war was nearly in sight. Much as we pray for the speedy arrival of the happy day of restored peace, more sober judgment now defers it into the nebulous future and envisions many hard tasks to be done and sacrifices to be borne. However, there is a lesson to be learned from this recent experience, namely, if peace had come this spring we would have been as poorly prepared for it as we were for Pearl Harbor. Our industries should avail themselves of this extended opportunity of planning for the post-war period.

Perhaps the days of the great tribulation about which the scripture warns us still lie before us and it is with a chastened spirit that we should contemplate our plans for the future. It is not my assignment or wish to present a homily on the spiritual aspects of tomorrow's problems but I will permit myself to say that we should not fall into the old rut of planning our future superficially or in a purely materialistic manner. What we mostly hear of under the heading of post-war expectation is a catalogue of new gadgets and rabbit tricks. The majority of us give little thought to the tremendous problems which confronts this country, as well as the rest of the world, in readjusting itself from total war to peace.

When the time comes we will have to demobilize America's war-time economy at approximately the rate at which we re-absorb our fighting men into civilian life. What is to be demobilized and how to do it will be vital questions. Almost everyone will agree that the economy of 1939 should not be the pattern. The last year of peace was also the last year of the long, slow recovery from the depression. There was still over-production, unemployment and the need for government relief. 1939 was the threshold of war and we should seek a better goal for the future.

CONSUMER DEMANDS

One of the alluring considerations in post-war planning is the tremendous backlog of consumer demands because so little is now being manufactured for the civilian market. Do we ever stop to consider how rapidly this potential market may become saturated? Our war expenditures are now running at 7 billion dollars per month. Let us assume that when the war ends only 2 billion dollars monthly will be spent for the maintenance of our armed forces, rehabilitation and so forth. This leaves a gap of 5 billion dollars in monthly production of new civilian commodities. It is estimated that the accumulated demand for new automobiles, homes and electrical appliances and other merchandise will total 28 billion dollars. If we divide these 28 billion dollars by the cutback of 5 billion dollars from current war expenses we have less than six months' production, assuming full scale operations. Some time will be consumed in reconverting plants, tooling up and re-establishing markets but, with the experience which our war plants have acquired in the handling of huge government contracts and bending every effort toward harnessing these new powers to peacetime economy, these markets will be saturated almost as rapidly as the six months which may be considered as our bogey figure. Many manufacturers were forced through the requirements of the war into ventures which were new to them. They have acquired huge plants equipped with the latest machinery and the necessary trained personnel. Few of them will lock the doors of these plants without making a great effort to harness them to post-war civilian requirements. This will mean new competition in practically all the appliance fields, new makes of automobiles, new makes of aeroplanes, new electric washers, refrigerators, electric irons, cameras and the endless procession of other commodities which our statisticians so frequently use as a basis for estimating the public's purchasing power. Former manufacturers of these items must prepare to meet an entirely new phase of competition and should not hazard a re-entry into the market with products which lack the best that they know how to put into them.

In the fields that are closer to us, such as textiles, dyes and chemicals, a parallel condition will confront us. The capacity for the production of hundreds of millions of yards of herringbone twill, army drill, parachute cloth, duck, netting and webbing will have to be converted into other uses which will have to find their place in crowded markets. Individual manufacturers planning their new program without reference to their competitors will encounter heavy overlappings and overproduction in certain commodities much beyond the public's capacity to absorb. It is regrettable that no plan for co-ordinated research into post-war markets is being arranged because of our sacred freedom of individual enterprise.

RECONSTRUCTION OF DYESTUFFS INDUSTRY

The dyestuff industry is confronted with a tremendous problem of reconversion. It is safe to estimate that the production of Vat Khaki alone is proceeding at a rate which is 500 times greater than it was in 1939. Quite a number of dyes present almost as startling a picture and in the aggregate the dyestuff economy of today is completely distorted by the needs of war and the government's enforced conservation measures. If all this huge special war production could be cut off at a moment's notice without involving the industry in ruinous losses the prospect would not be as dangerous as it may well prove to be. Behind each pound of finished vat dyestuff which the plant delivers there are at least 5 pounds in the making, in many instances without the possibility of alteration or change to something more adaptable to peacetime requirements. In addition long range obligations on specialized raw materials will have to be cancelled or readjusted and it is unlikely that these steps can be accomplished without mutual losses throughout the industry.

The termination clauses contained in present government contracts do not provide adequate protection to the dyestuff industry against cancellations or curtailments. Textile mills as direct or sub-contractors will be taken care of but the dye and chemical suppliers occupy the positions of sub-sub and sub-sub-sub contractors whose claims may prove more difficult

*Presented at meeting, New York Section, April 21, 1944.

to audit to the satisfaction of government adjusters than the simple arithmetic involved in subtracting heavy losses from their bank balances. A fair appraisal of the situation leads to the logical conclusion that all contributors to the war program must be treated alike and be properly protected, whether their contract is direct, indirect or in the sub-sub category. In order to keep war supplies moving at a winning rate up to the day of victory better guarantees of protection to the dye and chemical industries are needed than they now have. This will prevent the premature anticipation of lowered requirements and consequent curtailment of war production which common business judgment will otherwise dictate.

I have tried to picture the more serious aspects which the conversion from war to peace will present to this country. Those of us who experienced the glorious Armistice Day which ended the fighting of World War No. I will never forget the frenzy of the people who filled the streets and who danced and sang amid showers of confetti and ticker tape. Peace had come at last and thoughtlessly the expectation was shown in every smile that the morrow would bring prosperity and the fruits of those things for which the bitter battle had been waged. We would rather not recall ensuing depressions, unemployment, Hoover squatter villages, bread lines and apple sellers in ragged uniforms. Let us not retravel this same road.

POST-WAR EQUIPMENT

Turning our crystal ball for a rosier view of the future I will now review some of the more pleasant aspects of the conversion from war economy to peace economy and some of the tangible planning for new markets on which we should already be at work. It is taken for granted that the resumption of the manufacture of civilian goods will embody many improvements which are the fruits of the period of intense research and high speed manufacture which was forced on all industries through war exigencies. Much old equipment was scrapped and when new machinery is installed it will be of the most modern type.

War requirements have forced many radical changes on our industrial economy which otherwise might have taken generations to evolve. The intensified manufacture of synthetic fibers to replace silk is only one of them and I will refer to this item again. Less obviously involved but of equal importance to our textile program is the development of certain metals, such as aluminum, magnesium and alloys of copper and steel of great strength, lightness and suitability for the manufacture of new weaving, knitting, dyeing, printing and finishing equipment. The tremendous requirements of the war have brought down their production costs to levels that assure them a new and very useful place in the designing of new textile equipment. Think of the possibilities of replacing heavy iron castings, wood and cord with light, tough prefabricated parts made of these new metals. Coupled with modern design we can confidently expect lighter, more durable and efficient equipment capable of higher production speeds, more dependable results and lower operating costs.

POST-WAR DEVELOPMENTS IN DYESTUFFS

It is a reasonable question to ask whether the dyestuff industry is likewise confronted with prospects of post-war developments of a similar striking nature? Unfortunately, dyestuffs are not created by designers on drafting tables. All of you have probably seen pictures of the so-called dyestuff tree or coal tar tree in which the derivation of dyestuffs from their intermediates is illustrated in the form of a tree with its roots in coal tar and with its leaves labeled with the names of familiar dyestuffs. I do not wish to appear facetious in reminding you that actually no such tree exists and that there are no leaves which are merely waiting to be christened with new names. The buds which are capable of producing such leaves are the dyestuff industry's research laboratories which are perpetually seeking new combinations of known organic materials supplemented by newly discovered organic compounds in the hope that somewhere in the unknown there may be found new dyestuffs which will fill some niche which is not adequately covered by the present palette. The maintenance of research work aimed at the perfecting of existing dyestuffs and the quest for entirely new products is a continuous operation within the industry.

Those of us who are reasonably familiar with the more than 3,000 active dyestuff types which were on the market when the war broke out must admit that there were very few serious gaps in the line which would call for highly specialized research in a few restricted directions. A new situation, however, has developed since the war in the need to manufacture in this country numerous dyestuffs which were formerly purchased abroad and which are now off the market. In the confident assumption that this country is determined to maintain a total independence of all foreign sources for dyes and other products which are of relative importance to its economy, this program of the Americanization of such foreign brands will undoubtedly be pursued with the greatest possible dispatch and energy.

The technique of dye application is the subject of intensified research efforts in the laboratories of most of the dye manufacturers. New fibers in several instances call for a considerable amount of investigation to determine the most suitable dyestuffs and the most favorable application conditions. The availability of many new auxiliary chemical compounds as aids in the preparation, dyeing, printing and finishing of most fabrics calls for similar studies in order that current practice in the handling of each material will be on the highest attainable level. In many instances it has been found possible to break down some of the old established lines of demarcation as to what dyestuffs are best suited for the coloring of even the older fibers and by adjusting the application technique new effects promising higher standards of fastness properties may be expected; in some instances they are already available. The ingenuity which has helped our several industries in making readjustments caused by the shortages of old materials which were habitually used has, in many instances, brought unexpected fruits because of the successful conduct of investigations which might otherwise not have been undertaken. It is safe to say that most manufacturers will benefit from consultations with their supply house in undertaking any work involving the new fibers and fabrics or the most efficient utilization of new equipment which they either have acquired or are planning to install.

Another aspect of post-war developments in the dyestuff industry remains in the realm of the unpredictable because it is based on new researches and recent economic developments. I refer firstly to the availability of new organic compounds, the manufacture of which was taken up out of war necessity—a few of these are dyes for colored smoke shells and grenades, fluorescent dyes, pharmaceutical substitutes for unobtainable natural drugs, such as quinacrine, synthetic rubber and its associated compounds, new plasticizers, finishing and protective coating materials, many new or perfected resins, and needless to mention—explosives, some of which offer the possibility of modification for other uses. Alcohol is being produced in unparalleled quantities. Synthetic toluol is being manufactured in quantities that will permit if not force its use for dye manufacture on a much larger scale than heretofore. The huge plants which were erected for these enterprises will not remain idle when peace comes. Surely and possibly rapidly their output will be absorbed in an expanded program of organic synthesis which could not have materialized in any other way for cost reasons. If we consider only toluol as plentiful and cheap as benzol we can envision an up-

heaval in dyestuff economy of far reaching consequences.

QUALITY STANDARDS IN DYESTUFFS

Returning once more to present problems it is an interesting fact that the American dyestuff industry during the throes of the war with all of its ensuing shortages of basic materials and equipment has maintained the pre-war standards of quality for all of its products. In this respect the current war presents a totally different picture from this country's experiences during World War No. I. Back in 1914 we had an infant dyestuff industry which was largely dependent on foreign sources for many raw materials and the most important intermediates. One might almost say that only the finishing operations were carried out in this country and that the roots of the industry lay in foreign soil. During the last 25 years all this has been changed. The American dyestuff industry and associated organic chemical industry are practically self-contained and independent of foreign sources. Furthermore, they are large enough to take care of this country's total requirements with a surplus adequate to participate in foreign trade to a creditable degree. Since the dye industry has not found it necessary to degrade any of its standards because of war conditions the manufacturers' inventories of dyestuffs and those of the consuming mills will represent standard qualities when the change from war production to peacetime requirements takes place. This forms a very important contrast with the conditions which confronted the dyestuff and textile industries on the Armistice Day following World War No. I. In those former war days dire necessity forced the use of many inferior dyestuffs and makeshift substitutes. All surpluses of these products were eligible for the scrap heap when peace came and the industry had an opportunity to devote time and capital to the production of standard dyes and the newer faster colors.

DYESTUFF SURPLUSES

It is a universally acknowledged fact that the American service man, whether soldier, aviator, marine or sailor, has the finest clothing and other equipment of any nation in the world. This was made possible by the concentration of the dyestuff industry on the production of the finest and most durable colors which are known. It is these high quality products which are most heavily in production today and of which this country's inventories will be large when peace comes. To a great extent they present the limitations of special shades better suited for war purposes than for civilian peacetime markets and the situation may prove to be dangerous, if not hopeless, from a liquidation standpoint when the war ends. Our soldiers returning from the front will require a more or less complete rehabilitation of all types of clothing, including work clothing, for which our war colors should be suitable and will be available but battle jaded nerves and tastes must be taken into consideration. Our boys will probably refuse to wear khaki, drabs and tans as ugly reminders of their years of bondage. The rehabilitation of devastated foreign countries will offer lucrative markets for dyestuffs, as well as fabrics and finished garments but whether or not the foreign buyer will accept our war surpluses of khakis and olive drabs is quite another question. It is reasonable to assume that foreign tastes will follow the same psychology as our own and that when the opportunity presents itself to purchase new garments the selection will be the range of bright colors offering the widest possible contrast to tragic war recollections. Eventually, the foreign market will prove very lucrative since we believe that the German dyestuff industry has been wrecked through consistent bombing to such a degree that it will not be capable of resuming its former place for years to come, if ever. The Central European countries, South America, the Far East and other regions will have to come to us for their dyestuffs. On the general principle that a well rounded enterprise is properly balanced with a 20 per cent foreign sales program, the ultimate outlook for the American industry is bright, but the immediate prospect of costly surpluses of war colors has not been solved. It is necessary that proper assurances in the form of protection against unsaleable surpluses of war colors be given the industry so as to keep it operating at full blast to meet the very heavy war program which will rise to a new peak over the balance of this year. When, and with what suddenness, war procurements may be cut off depends entirely upon our military successes and is, therefore, unpredictable. Since there seems to be such a strong probability that many of the war Vat dyes will have as little call for by post-war civilian trade as shell cases, the government should quickly work out an acceptable plan whereby the full capacity production rate can be continued without fear of consequences.

POST-WAR TEXTILE FABRICS

It is to be expected that the textile industry will plan to produce many new fabrics to satisfy the highly competitive post-war market requirements. Full use will be made of the expanded range of synthetic fibers, taking into consideration some marked improvements in older rayon types which resulted from the needs of the armed services and to replace natural silk for hosiery purposes and other civilian uses. At our last meeting we listened to an excellent symposium on developments in the artificial fiber field but due to war requirements it was not possible to present the whole story. This will unfold itself rapidly as the government's requirements for these materials taper off. Although the majority of these new fibers and yarns are now reserved for war work it is hoped that their transition to post-war uses will be facilitated through the permission to use them in small quantities at once with a gradual expansion as circumstances permit. This will assure weavers and knitters becoming acquainted with the technical problems involved in their use.

Large quantities of textile machinery were scrapped when mills took on war contracts. The new equipment is capable of producing better fabrics at lower costs and as the mills re-equip themselves for full peacetime requirements the most modern machinery based on new metals and designs will be installed. The former necessity of producing inferior merchandise because of the limitations of equipment will thereby be overcome and the public will directly benefit from a greater supply of the best qualities of textiles at costs which may not be higher than applied to poorer qualities because they were less economically produced. Among the newly developed aids to high speed and efficient manufacturing and processing, in addition to normal mechanical improvements, are such new devices as electronic controls which perform services better than has been possible by the aid of human eyes and hands. Infra red ray devices which are performing wonderful services in the lacquering industry are finding very useful application in textile processing, making possible improvements in quality and time savings.

It is a safe assumption that the styling of post-war fabrics with respect to colors will show a decided improvement over pre-war practice. War weary and jaded tastes will seek exhilaration in a greater profusion of strong bright colors. Color is the most dominant characteristic of eye appeal in the styling of garments. Other features such as durability may be taken for granted or accepted on the seller's say so—but not color, of which each buyer is his own judge. In the past bright colors have been used rather sparingly in better garments because of a fear that they are not as durable as the duller and darker shades. This is no longer the case. Fabric designers may

use bright colors in their sun-fast and wash-fast lines without hesitation. Our service men have become acquainted with fast colors because of their use in the dyeing of uniform fabrics and as they resume their places in civilian life they will not be satisfied with inferior wearing apparel. They and their families and friends constitute such a host that they will have a very marked influence on the quality demands of the general public.

A parallel situation exists in the field of special textile finishes. Our soldiers have become acquainted with the benefits of the shrinkproofing of cotton fabrics, permanent waterproofing, dependable mildewproofing and other effects which they will demand in the new garments they will buy in the future.

Complusory labeling of all textiles with respect to fiber content, color fastness, special finishes and other quality features will have a marked effect on the post-war manufacture of all textiles. There will always be a market for cheap goods to be bought at low prices, either by indiscriminating buyers, or for purposes where high quality is no consideration. The point which must be emphasized is that the public is being educated to a better understanding of quality features and will pay for them as long as they are sure of getting their money's worth.

Let us consider the host of army, navy and marine corps procurement personnel who will sooner or later return to civilian pursuits and will likely seek employment in the textile fields in which they have acquired the knowledge of specialists. They know most types of fabrics from all their physical and chemical aspects—composition, weave, dye, finish and quality specifications. They have learned that knowledge and insistence on quality bring results. They will bring to the post-war industry this experience and it is not far fetched to assume that from both the manufacturing and procurement aspects textiles complying with scientifically devised specifications will dominate the market in a manner quite unlike we have ever encountered before. The industry has often expressed itself as waiting for the education of the consumer to appreciate quality goods which require understanding to justify their higher cost. I believe this day is near. Comprehension of quality will more nearly approach a vertical characteristic of the total textile economy than ever before since all factors are involved from the manufacturer, the distributor, the retailer, to the ultimate consumer. When our war sharpened skills become available for peace-time markets these considerations should be remembered.

It is an undeniable fact that most textile mills which are engaged in government work are today much better informed with respect to high quality dyeing, printing and finishing than ever before. We have in mind particularly the many mills which never catered to the quality trade and who, therefore, were not equipped to handle fast colors and for lack of incentive did not concern themselves with this technique. These same dyers and printers now are versed in the application of fast colors and since they are prepared to use them they will undoubtedly plan to participate in this more lucrative market. Accordingly, converters and manufacturers will find it very much easier to obtain fast color service because of the great number of dyers and printers who are equipped to supply them in contrast with the few specialty houses of pre-war days.

NEW DETERGENTS AND AUXILIARY CHEMICALS

Last but not least, a great contribution by the chemical industry to many industrial interests are the several synthetic detergents which are on the market today and which promise still greater improvements so that cleansing and processing effects which were hitherto handicapped or impossible will be carried out in the future with great ease and economy. Although huge quantities are in use today well over 80 per cent is restricted to direct or indirect war work because of insufficient manufacturing capacity to take care of the full market requirements. With the end of the war many millions of pounds will be freely available and the benefits of these very efficient lime-proof cleaning and scouring agents will find their way not only into textile mills but other industries that have use for such materials. The domestic household market will come in for its share which may eventually grow into proportions rivaling industrial uses. Our service men in all corners of the earth have learned the benefits of these detergents because of their capacity to function in waters of all descriptions; hot or cold, hard or soft, sweet or salty. As in the case of their clothing, they will want these benefits when they return home.

NEW RESINS

An almost parallel situation exists in the realm of auxiliary chemicals, such as the newer wetting and re-wetting agents, dyeing and printing assistants, stabilizers, emulsifiers, dispersing agents, mordants, protective colloids, color fixers, new bleaching agents and equipment, new oxidizers, softeners, delustering agents, etc., etc.

Time does not permit more than a passing mention of the contribution which the new resins are making in the improvement of textiles as permanent finishes, anti-creasing agents and for the production of other specialized effects. The expanding variety of these resins and their release from war service will present a tremendous opportunity for research in the production of novel, as well as useful, finishes.

PEACETIME ECONOMY

The war has taught us the importance of research, not isolated in a few institutions but shared by all industries as a co-operation with the government in the successful conduct of the war. Let us not drop these tools on the false assumption that the new peace economy will be a millennium of ease and comfort. Peace, happiness and prosperity are the prizes of the strong, the wise, and the well prepared.

The successful prosecution of this war means the defeat of our enemies. Victory in peace means the defeat of manufacturing problems, meeting competition and pleasing the ultimate consumer. The consumer is not as noisy and aggressive as a war-time enemy but his power is even greater. Therefore, we must plan with skill and forethought to meet the peacetime economy and to adapt ourselves to the drift from the sellers' market to one where the buyer will have the last word. Let us harness to this program all the skills and ingenuity acquired during the war through dire necessity—plus the old American enterprise to assure an industrial victory in the Peace we all pray for.

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ONE HUNDRED AND FORTY-FIFTH COUNCIL MEETING

THE Council held its 145th meeting at the Chemists' Club in New York on Friday morning, April 21, 1944. Present were President William D. Appel, presiding; Hugh Christison and Charles A. Seibert, Vice Presidents; William R. Moorhouse, Treasurer; William H. Cady, Carl Z. Draves and P. J. Wood, Past Presidents; John N. Dalton, Harry M. Hartnett and Charles H. A. Schmitt representing Northern New England; Allison R. Fletcher representing Rhode Island; Kenneth H. Barnard, J. Robert Bonnar, J. Ernest Meili and George A. Moran representing New York; James P. Conaway and John F. McCoy representing Philadelphia; A. Henry Gaede and Raphael E. Rupp representing Piedmont; Robert W. Philip representing Southeast; Henry F. Herrmann, Chairman of the Publicity Committee; Leonard S. Little, Chairman of the

SECRETARY'S FINANCIAL REPORT—APRIL 14, 1944

Received and transmitted to Treasurer	Applications	Dues, Regular and Reinstate.	Dues, Corporate and Sustaining	Miscellaneous	Totals
Aug. 1, 1943 to Jan. 14, 1944	$882.50	$11,122.25	$10,170.00	$2,073.02	$24,247.77
Jan. 14 to April 14, 1944....	657.50	1,870.38	3,565.00	2,034.74*	8,127.62
Total in fiscal year to date...	1,540.00	12,992.63	13,735.00	4,107.76	32,375.39
Leaving deposited by Treasurer with Secretary					2,000.00

MISCELLANEOUS ITEMS *

Olney Medal fund.....	$1,000.00	Gas fading blue prints..	3.00
Year books	653.08	Moth cloth	117.50
Reporters	8.40	Knitted tubing	26.10
Reprints	1.00	Standard gray cards.....	18.00
Buttons	10.50		$2,034.82
Crockmeters	80.27		
Crock cloth	74.47	Bank charge	.08
Water test apparatus.....	10.50		$2,034.74
Dyed standards	32.00		

Executive Committee on Research; Bertil A. Ryberg, Associate Research Director; and Harold C. Chapin, Secretary.

The Secretary's report of the 144th Council meeting and financial report of April 14, and the Treasurer's report of April 20 were accepted. The Treasurer was authorized to make further investment of the Olney Medal fund; and the First of Boston Corporation was authorized to accept instructions or receipt for securities from the Treasurer or Secretary. The Secretary was authorized to spend $500 additional per annum for assistance. The President reported on trips to meetings of the Mid West, South Central and Piedmont Sections; and Dr. Draves on the Annual Meeting, and Conference on Small Color Differences of the Intersociety Color Council, attended by himself, E. I. Stearns, Jr., and F. T. Simon as A.A.T.C.C. representatives. Mr. Little reported for the Executive Committee on Research. Mr. Herrmann reported substantial increase in Corporate memberships and presented a new publicity pamphlet. Plans for the General Meeting at the Claridge in Atlantic City on October 12, 13 and 14, outlined by Mr. Seibert, General Chairman, and Kenneth H. Barnard, Technical Program Chairman, were approved. A committee, consisting of W. H. Cady, W. R. Moorhouse and P. J. Wood, appointed at the last meeting to consider revision of the By-law on Committees, recommended rewriting of Article IV. With minor revisions their proposals were submitted to letter ballot of the Council. The President was authorized to appoint a committee to consider cooperation with the Society of Dyers and Colourists on publication of a revised Colour Index, and to make recommendations to the Council.

Elected to Corporate membership were:

Acme Finishing Co.
Alrose Chemical Co.
Apex Chemical Co.
Apponaug Co.
The Bell Co.
Berkshire Knitting Mills
Blossom Products Corporation
Bradford Dyeing Association
B. Z. B. Knitting Co.
Celanese Corporation of America
Claussner Hosiery Co.
Cold Spring Bleachery
Collins & Aikman Corporation
Enterprise Dye Works
W. F. Fancourt & Co.
Fouke Fur Co.
Franklin Process Co.
Fruit of the Loom Inc.
Hampton Co.
Thomas B. Harvey
Hayward-Schuster Woolen Mills
Hercules Powder Co.
Kenyon Piece Dye Works & Kenyon Finishing Co.
Massachusetts Mohair Plush Co.
Merrimack Manufacturing Co.
North Carolina Fabrics Corporation
Max Pollack & Co.
Princeton Worsted Mills
Providence Dyeing, Bleaching & Calendering Co.
Roanoke Mills Co.
Robertson Bleachery & Dye Works
Slatersville Finishing Co.
A. E. Staley Manufacturing Co.
M. T. Stevens & Sons Co.
Strutwear Knitting Co.
Watson Park Co.
O. F. Zurn & Co.

Each of the following was elected to the class of membership specified, as of thirty days from publication of application, provided no objection be received meanwhile by the Secretary.

SENIOR

J. L Anderson
A. G. Asaff
J. N. Baccash
B. W. Bacon
B. N. Baer
H. S. Barnes
W. F. Bartelt
A. E. Bartlett
F. M. Batson
T. H. Boss
R. W. Bower
A. J. Brosnan
E. S. Bullock
J. W. Byam
E. W. Carlson
G. J. Chaban
G. B. Chabot
W. M. Cherry
J. C. Chilton
W. F. Cockrell
R. S. Cox
O. Davids
I. F. Diamond
R. M. Dorian
H. Eastman
W. R. Eastman
O. Edwards
G. T. English
N. V. Feldpush
M. L. Fillippeli
R. K. Flege
J. Fulmer
R. W. Fritzinger
G. F. Gaede
J. H. Glover
A. R. Gray
A. Haeberlin
A. H. Halsey
G. F. Hamilton
J. M. Hamilton
K. M. Harms
M. L. Harrison
J. Hey
M. F. Hill
W. R. Howell
J. H. Hulton
P. T. Jones
C. M. Keenan
B. M. Keever
J. A. Kelly
J. C. Kilroy
B. Kushner
H. S. Lewis
H. W. Lindley
A. P. Livi
W. J. Loeffler
A. S. Mackenzie
D. C. Macneill
R. L. Mauldin
J. W. McCarty
R. F. McDonald
E. D. McLeod
W. L. Mills
M. J. Negro
W. Opderbeck
F. H. Parris
A. P. Pelitsch
J. A. Ramsay
J. W. Rembe
C. I. Ruth
C. W. Sarti
R. Schaefer
M. M. Schlier
O. E. Schmidt
A. Schneider
F. W. Schreiber
A. M. Schwartz
D. R. Serra
D. Sottile
H. Spayde
T. V. Staub
M. G. Stern
J. A. Stevenson
A. Tanzer
S. M. Thompson
J. E. Tobin
S. F. Tremmel
F. Tscheulin
F. E. Uhlin
J. J. Valter
J. Van Praagh
A. M. Walker
E. P. Ward
L. I. Weiner
D. F. Waters, Jr.
R. H. Zeuren

JUNIOR

E. H. Allard
S. Alvarez
H. A. Busby
G. Heller
M. A. Koen
D. T. Koush
R. A. Saunders
H. R. Schroeder
R. O. Steele

ASSOCIATE

W. E. Bolter
G. T. Collins
E. Curry
J. D. Gercke
A. Greyborn
E. H. Hart
H. Jefferis
E. Lengning
G. S. Mackey
J. T. McAden
C. A. McGill
M. Mendelsohn
R. Menzer
G. F. Napier, Jr.
I. A. Rolfe
J. F. Sheehy
J. M. Smith
E. I. Stokes
J. C. Tarvin

STUDENT

V. Franco
H. L. Friedman
B. Rothschild

Transferred from other classifications to Senior membership:

S. Backer	W. B. Kuenzel
J. E. Conway	F. L. Pepper
J. Dixon	S. G. Smith, Jr.
M. A. Grimes	W. R. Smith

Respectfully submitted,

HAROLD C. CHAPIN, *Secretary.*

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ONE HUNDRED AND THIRTY-EIGHTH MEETING OF THE RESEARCH COMMITTEE

THE Research Committee held its 138th meeting at the Chemists' Club in New York on Saturday morning, April 22, 1944. Present were Leonard S. Little, Chairman of the Executive Committee on Research, presiding; W. D. Appel, A. G. Ashcroft, S. Backer, K. H. Barnard, E. C. Bertolet, J. R. Bonnar, R. G. Buck, W. H. Cady, W. W. Chase, H. Christison, R. F. Culver, M. A. Dahlen, J. N. Dalton, C. W. Dorn, C. Z. Draves, E. Driscoll, J. L. Fawcett, A. R. Fletcher, A. H. Gaede, A. H. Grimshaw, H. M. Hartnett, A. E. Hirst, N. A. Johnson, D. P. Knowland, J. F. McCoy, C. J. Monego, W. R. Moorhouse, G. A. Moran, A. D. Nute, P. M. Otto, R. W. Philip, W. F. Prien, F. A. Prisley, B. A. Ryberg, C. H. A. Schmitt, C. A. Seibert, R. H. Souther, F. M. Steadman, H. W. Stiegler, and H. C. Chapin, Secretary.

Mr. Bonnar discussed recent activities of the Executive Committee on Research. Mr. Moran reported for the Committee on Fastness Tests for Dyed or Printed Cotton, with particular reference to work on a Crock Meter modified for scrubbing tests. Mr. Seibert and Mr. Christison reported for the Light Fastness Committee. Dr. Barker described work in progress on correlation of laboratory mildew tests with outdoor exposure. Mr. Barnard stated that representative groups working on ageing tests for textiles had decided on heat, light and moisture as the factors to be embodied in a practical test, even though not including all factors contributing to age deterioration.

For Mr. Marks' committee, Mr. Ryberg reported progress, under the American Viscose Scholarship in Lowell, on the investigation of restoration in dimensions of rayon dried under tension. He reported also on the American Standards Association Committee on Ultimate Consumer Goods, now expanded to a more widely representative body.

Reporting for the Committee on Water Resistance of Fabrics, Dr. Stiegler recommended adoption of the spray test as an official standard, which was so voted. The immersion test he said was being revised. The hydrostatic tester was undergoing comparison with the Suter tester in the Lowell Textile Institute laboratory. Replying to criticism of the human element in the interpretation of spray tests, Dr. Draves stated that agreement among observers had proved excellent. In his opinion results were satisfactory in comparing water repellents; perhaps not so good in comparing cloth constructions. Dr. Draves described a new method of evaluating wetting agents which he termed a "Rewetting test." After applying a wetting agent by standardized method and drying, he times duration of specular reflection of light from a water drop on the cloth surface; then compares wetting agents according to the concentrations necessary to give same rewetting time.

Mr. Knowland reported delay in manufacture of the multifiber test fabric because of government restrictions on use of nylon. Shortly after the meeting this use received approval so that weaving could proceed. Mr. Little requested that in the future each sub-committee chairman submit, at each Research Committee meeting, a report suitable for publication. Mr. Appel reported authorization by the Council of a committee to continue discussions with the Society of Dyers and Colourists on possibility of joint sponsorship of a new Colour Index. He stated that despite current trying conditions, assurances from publisher and printer had made practicable the publication of a year book in 1944, but only through utmost cooperation of all committees in prompt submission of reports.

Respectfully submitted,

HAROLD C. CHAPIN, *Secretary.*

Discussion Session of the Inter-Society Color Council, March 1, 1944 on

SMALL COLOR DIFFERENCES

This meeting co-sponsored by the American Association of Textile Chemists and Colorists and the Federation of Paint and Varnish Production Clubs

CHAIRMAN DEANE B. JUDD (National Bureau of Standards): We are faced this morning with a discussion session on small color differences which has graduated to be discussion after a rather larger degree of preparation than was first anticipated. I think this is all to the good. The times listed on the program for these talks are such that even after we have heard from member bodies of the Inter-Society Color Council interested in this subject, there should be one hour left for general discussion. This is the next to the last item on the program, and I think the most important one.

We shall proceed directly then with the first topic—Why Small Color Differences are Important in Textiles—remarks to be given by E. I. Stearns of the Calco Chemical Company, and F. T. Simon of Sidney Blumenthal & Company. I believe Mr. Stearns will present these remarks.

. . . Mr. Stearns presented the following paper . . .

WHY SMALL COLOR DIFFERENCES ARE IMPORTANT IN TEXTILES

F. T. SIMON and E. I. STEARNS
for the Color Committee, A.A.T.C.C.

THE question which the authors have been asked to discuss is "Why small color differences are important in textiles." Because one of the writers was until recently associated with the Philadelphia Quartermaster Depot it may be that the discussion will emphasize government procurement but the purpose is to embrace all textile manufacture for civilian as well as government use. The present discussion is limited to clarification of the issues and makes no proposal of remedial action.

There are two main fields where color tolerances come into application in the textile industry. One of these is in color matching and the other is in fastness evaluation.

SUMMARY

In color matching and particularly in buying similar textiles from different mills small color differences between match and standard are inevitable because of variations in the whole process of manufacture. Evaluation of the magnitude of these differences is one application of color tolerances.

In fastness evaluation a colorist must determine when an observed color change is "appreciable" after a textile has been subjected to a destructive test. A definition of "appreciable" is another application of color tolerances.

IMPORTANCE IN COLOR MATCHING

With particular reference to the needs of the armed forces, color matching is necessary so that when troops are on parade, they will look like well dressed soldiers in their olive drabs or sailors in their dress blues and will not exhibit all the colors found in an Easter parade. This need for uniformity is not merely to satisfy the whim of an admiral or a general but it is also to satisfy the esthetic sense of the onlooking civilians who throughout the years have developed a belief that when they buy two pieces of cloth, they have a right to demand that one looks like the next. This is also necessary for the soldier. A motley collection of colors in a regiment gives a general impressin of carelessness which is not conducive to the best morale and discipline.

Another reason for demanding color matches is that the government must treat everyone fairly and demand as much dye content and shade matching from one manufacturer as the next. Without color tolerances, quotations would be slightly lower because of reduced dye usage and after a short period of competition, submitted cloths would be scarcely tinted at all.

Still another need for good color matching is adherence to the original purpose of the color. Whatever the reason, the individuals in the armed forces responsible for the choice of the olive drab or navy blue chose those particular colors after considerable thought and with some special purpose in mind, such as, good camouflaging. Radical departures from the original intended shades will destroy their utility in this connection.

THE COLORIST'S DECISION

Up to the present time, decision as to whether a color match is acceptable is based on visual comparison with the standard. The difficulty is to determine whether the observed deviation lies within the permitted tolerances. In making this decision the colorist must balance the practical factors of closeness of match and speed of production if he is to insure the smooth functioning of the procurement process.

When the buyer is urgently in need of cloth, the textile mill may take unwarranted time arriving at a more exact color match than is necessary and this accentuates the shortage. On the other hand, if a mill ships out a lot which does not match well enough in the opinion of the buyer, there is considerable delay and expense in returning the cloth and getting a substitute shipment. Two questions which are in a colorist's mind when he examines a slightly off-shade sample of production are therefore:

(1) Is the procurement agency in such urgent need of the material that it may stretch a point and accept off-shade material? In war time, when a tremendous force must be clothed almost over-night and demand exceeds manufacturing capacity this is particularly likely to happen.

(2) What effect will redyeing have on
   a) The delivery schedule of the mill?
   b) The tensile strength and other physical characteristics of the fabric.
   c) The dyehouse profit.

The dyer or colorist whose sole purpose is the production of perfect matches, without regard to these other practical factors, would be of little value to a textile mill since in view of the present state of the dyeing art exact matches ordinarily require an exorbitant expenditure of time and production would lag below the economical level. The successful dyer or colorist survives because of his skill in maintaining a high rate of production which lies within acceptable tolerances of the color standards.

WHY COLOR DIFFERENCES ARE INEVITABLE

The following conditions illustrate some of the difficulties which in the present state of the dyeing art, plague the dyer and colorist during his endeavor to produce accurate color matches.

1. Non-uniformity of textile materials. Fibers of greatest use in military garment manufacture are of natural origin. During fabrication of these fibers into yarns or fabrics, a great deal of blending is done in the effort to minimize variations due to different sources of fiber. This is fairly successful but does not produce perfect uniformity. As an example of the extreme differences which are known to exist in natural fibers; cotton grown in one locality may dye a much weaker shade with a given amount of dye than will cotton grown in another locality.

2. Non-uniformity of manufacturing and other processes through which a textile material passes before dyeing. The inevitable slight variations in twist and tension which accompany the conversion of fiber into yarn and fabric on thousands of machines in many different mills impart a slight but definite variation in the behavior of successive lots of textiles toward dyes. The preliminary scouring and bleaching operations which prepare textiles for the dyeing operation are batch processes and there again a slight but definite variation may be imparted to the behavior toward dyes of successive lots of textiles.

3. Complexity of the dyeing process. The shade resulting from a specific dye formula may be effected by the ratio of fiber to bath, the salt content, and many other similar variables. Automatic controls have not been universally adopted by the textile industry. The equipment in a dyehouse usually has been assembled over many years and varies in capacity, inherent controlability, and state of repair. The actual operation of the equipment is carried out by unskilled labor devoid of technical training. In many cases, a lot of 1,000,000 yards may be dyed in 1000 batches of 1000 yards each or perhaps in even smaller batches. The ability to produce satisfactory color matches under such conditions is a tribute to the amazing skill of the textile dyer.

4. The somewhat uncertain basis on which a dyer must release a dye lot. When the dyer considers a batch is finished, a sample is cut from the lot still in process and it is dried and evaluated. It may be impossible to treat this trial sample exactly as the main batch will be treated because of the need for speed in evaluating the trial sample before the main batch, still in process, undergoes an appreciable change. The shade of some dyes varies with moisture content and true equilibrium may require hours for attainment. The main batch after completion of the dyeing operation may be subjected to finishing operations such as waterproofing, calendering, etc., which changes the shade permanently. Therefore, the dyer in judging his trial sample may have to allow for the difference he expects to find between this sample and the finished main batch a day or two later. If his judgment is incorrect, the main batch may have to be returned and redyed.

5. The element of human judgment in correcting an off-shade dyeing. If the trial sample is off in shade, the dyer must decide the character of the variation. Is it too red, too yellow, too blue, too bright, too dull, too weak, too strong? If it is correct in strength but not in hue, can the necessary corrective dye be added without increasing the strength of the dyeing beyond an acceptable tolerance? If it lacks red, should the dyer add a yellowish red or a bluish red dye, or perhaps a reddish brown dye? The problem of speedily correcting an off-shade dyeing is facilitated by the experience which the dyer has acquired through many years' constant practice in his profession.

6. Another inevitable source of variation in color is that the same dyes are not necessarily used in the matches as are used in the standards. This immediately introduces variations resulting from illuminant and observer eye sensitivity. Dyers frequently test the accuracy of a match by judging the sample in both north skylight and in artificial light from a tungsten light source. A different color variation will be observed under these two illuminating conditions, but if neither color difference is objectionable, then it is likely that other light sources will also make the samples appear as satisfactory matches. Different observers will see color differences in different ways and even the same observer will slowly change with age in his hue discrimination sensitivity. To overcome this, it is common practice to have more than one man in a textile mill judge the accuracy of a final match.

7. Color is a continuous affair and a three-dimensional affair, both of which make it somewhat difficult to apply an arbitrary decision. If the problem is to count the number of beans in a bag, it is possible for a number of men to come to agreement as to the exact number of beans in the bag. There is a definite answer and if anyone disagrees, it is because he has counted wrongly. Color, however, is not added to textiles in units but is a continuous affair and by infinitesimal variations of amount of dye used, it is possible to vary the shade or color of the final product continuously. If a standard olive drab could be off shade slightly on the green side or slightly on the red side but not off-shade in any other manner, the problem would still be fairly simple. However, while shade differences of this type are being introduced by altering the dye formulation, the depth of shade may be simultaneously changing. Two observers may differently evaluate the seriousness of a color difference introduced by depth of shade or by change of hue. To complicate matters still further, there is a third way in which the color may simultaneously vary, that is, in what many textile colorists know as "brightness." The olive drab may be a duller or a brighter shade. The color terminology of the textile colorists used above, namely hue, depth, and brightness, and the psychophysical definition of color, dominant wavelength, luminance, and purity, while not showing a one to one correspondence in exact meaning both emphasize the three dimensional nature of color because of which small color differences are perfectly normal and must be expected.

PRESENT METHOD OF GRADING SAMPLES

The present method of determining whether or not a particular sample falls within tolerances is a visual examination of the cloth with the colorist remembering from day to day how big a color difference is allowable. The samples of cloth may be placed on a large piece of the established standard sample which has been thrown over a 45° angle table. The illumination is generally over the observer's shoulder and is in most cases north skylight, although some artificial illuminants have been used. Experienced shaders determine whether or not the sample in question is within the allowable tolerances. It is a go, no-go proposition. Either the sample is or is not an acceptable match.

REPRESENTATIVE DATA

Visual determination of acceptability will typically result in agreement to the extent shown in Table I. If 12 colorists are asked to pass upon 100 samples submitted by different mills to match a given standard in 20 of the 100 samples all twelve of the colorists may agree whether or not a sample should be accepted. In 18 cases all but one colorist may agree while in 6 cases the result may be six for and six against. The following table shows the extent of agreement to be expected.

TABLE I
Visual Observations

Disagreements	*Judgments*
0	20
1	18
2	17
3	15
4	13
5	10
6	7

Under "disagreements" are listed the number of colorists who disagree with the majority verdict. Under "Judgments" are listed the number of samples which fall in each category.

If the twelve graders were exactly standardized in their observing and remembering of tolerances, all 100 judgments would fall in the group of 0 disagreements. The fact that there are likely to be 80 samples showing disagreements shows that the present system of subjective judging will in many cases leave room for argument.

Here, in review, are the facts. It is necessary and desirable to have close color matches. Small color differences from lot to lot are inevitable. By the present method of visual grading, there is often room for argument.

By the data of Table I it is not meant to infer that this same situation exists in all phases of the textile industry. The textile mill colorist presents little or no color tolerance problem because he can produce a close match well within the conceivable practical color tolerance day in and day out. The problem arises after the material leaves his hands, primarily in combining supposedly identical products of different mills.

No attempt will be made to answer the question, "What kind of tolerance system is wanted by the colorist who is dissatisfied with the present system?" It will only be mentioned that at present it is the practice of some colorists to keep swatches of past shipments and in doubtful cases they may refer to the "scrap book" to see what they have sent out before. Whether a system of physical standards of color tolerances is practical and generally desired has not been sufficiently discussed among textile men to warrant an expression of opinion.

IMPORTANCE IN FASTNESS EVALUATION

The second broad field of application of color tolerances is in fastness evaluation.

Having a sample of textile which is the desired color when originally offered for sale is not sufficient: the color must also be somewhat near the original shade after use for a reasonable length of time. If a dye retains its original color under conditions of use, it is said to be fast, while if it changes its color, it is said to be fugitive. The measurement of fastness, therefore, depends upon the measurement of the amount of change of the color when it is subjected to a particular condition of use or a laboratory condition which simulates this use. One of the most common fastness tests applied to textiles is light fastness, that is resistance to change of color under the influence of light. The following discussion is limited to light fastness but light fastness is chosen only as an example of a fastness evaluation and similar considerations apply to other fastness tests. A few of the other common fastness tests applied included fastness to washing, perspiration, dry cleaning and crocking.

PRESENT METHOD OF TESTING

A complete description of the recommended procedure for testing light fastness may be found in the annual year book of the A.A.T.C.C. Very briefly, it is customary to carry out the tests as follows:

Expose a sample in the Fade-Ometer, examine it at the end of 2½ hours, again at the end of five hours and again at intervals, each one of which is double the previous interval. When on examining the exposed sample, it shows an appreciable amount of fading, it is removed from the Fade-Ometer and rated. If the appreciable amount of fading occurs upon the first examination after 2½ hours, it is given a rating of 1 and if the appreciable amount of fading is evident at the eighth examination after 320 hours, it is given a fastness rating of 8. Since the sample which fades very badly in 2½ hours would be called 0, the fastness rating of samples may vary between 0 and 8 with the higher numbers indicating the higher fastness.

DIFFICULTIES

The obvious difficulty in the above lies in the term "appreciable amount of fading." In order to have standards of reference to define this term, eight standard dyeings were until recently recommended. It is presently planned

to substitute for these old standards a new set consisting of blended fibers of a fast and fugitive component in different proportions. In order to calibrate one's eye, one should expose these standards for the prescribed length of time, observe the changes, and use these changes as the definition of "appreciable." While this is probably an improvement over each man's using his own judgment, there are still difficulties because the standards are all blue dyeings and it is difficult to compare color change in blue to a color change in red or some other hue. Looking at blue dyeings the least perceptible difference is smallest in yellow light, greatest in blue light; and vice versa. This introduces another variable into determination of "appreciable" when comparing changes in red or yellow samples to blue standards. Also, the standards are of medium depth and comparison with weaker or stronger dyeings is not easy.

Another difficulty is that dyes do not all fade in the same manner. Some "fade on tone," that is, they seem to change to a lower concentration of the same dye. Others become "duller" or change in "hue." Thus, if one is comparing a sample which is subject to extreme dulling to a standard whose main change is a loss in depth, it is difficult to decide upon equivalent color changes.

A further complication in fading is that the colorimetric interpretation of the changes introduced in a dye by exposure to light may differ depending upon the concentration at which the dyeing is made. For instance, Patent Blue A (C.I. 714) is noted for its visually anomalous fading. Thus, a ½% dyeing on wool exposed to the Fade-Ometer eight hours fades lighter. On the other hand, a 4% dyeing faded the same time becomes visually darker. Hence, the dye has a different colorimetric interpretation of its fading dependent on the concentration.

DUAL APPLICATION OF FASTNESS DATA

If a color matcher is asked how he would like to have a fading result expressed, he will probably answer, 'expressed in terms of hours exposure, to produce a just objectionable color change.' Taking this statement at its face value, this means that if any one sample is faded, a time should be reached when the color change introduced will be just objectionable. One important phase of fastness tolerances then is to have universal agreement on whether a particular sample has undergone an objectionable change or not.

A second important use of fastness tolerances lies in a tabulation of the fastness of a large number of dyes in order that a color matcher may choose therefrom a compatible combination. It would be very nice if each dye had a single fastness rating which would hold regardless of the concentration at which it was dyed or regardless of the combination of other dyes with which it was dyed. Unfortunately, however, this is not the case for colorimetric ratings. For instance, in the case of Alizarine Blue Black B (C.I. 1085), a weak dyeing has a fastness rating of 5, while a strong dyeing has a fastness rating of 7. There is then no single value which can be applied to this dyestuff and which will describe its fastness under all concentrations. As a further example, Indanthrene Yellow G (C.I. 1118) is not recommended for use as a self-shade where light fastness is required, for in addition to its phototropic properties, that is, a fading which is reversible when the light is removed, it possesses an objectionable fading in that it becomes duller and tends to turn olive. Because of this tendency to turn olive, it would be given a low fastness rating. On the other hand, in combination with other colors to make khaki, this dulling of the Yellow G tends to counteract the fading of the other olive components and the result is the improved fastness of the combination. The fact is, therefore, that Yellow G is beneficial in the khaki formula. In this case, therefore, a number which would satisfactorily describe the color fastness to light as a self-shade would not be applicable to the use of this color in combinations.

There is, then, another definite need—a need to find a method of evaluating fading so that the description of the fastness will enable a prediction to be made about the fastness under varying concentrations and in combination with other dyes. Some preliminary work which has been done along this line indicates that an analytical interpretation of spectrophotometric data may answer this requirement. For the time being, however, it appears better to ignore this question in this discussion of color tolerances. The broad question of how fading results should be expressed includes both phases—(1) a measurement of an objectionable color change and (2) a statement which will be useful describing the fastness of a dye under all conditions of dyeing. The narrower question of how color tolerances are useful should at this time be limited to the question of how to define an objectionable color difference.

In the following discussions we will hear today on "Summary of available information on small color difference formulas," and "What information do we lack," the textile colorist is primarily concerned with the question, "How are these objective methods useful in defining the 'appreciable' or 'just objectionable' color differences in color matching tolerances and in the evaluation of fastness."

ACKNOWLEDGMENT

The above views on the need for improved color tolerances in the textile industry were prepared jointly by F. T. Simon of S. Blumenthal & Company, formerly of the Philadelphia Quartermaster Depot, and E. I. Stearns of the Calco Chemical Division. The discussion was reviewed by the Committee on Color of the A.A.T.C.C., consisting of Dr. I. H. Godlove, Chairman; Wm. D. Appel, Dr. Carl Z. Draves, and the co-authors. It was also reviewed by the A.A.T.C.C. Committee of Voting Delegates to the Inter-Society Color Council, Dr. C. Z. Draves, Chairman, Mr. Appel, and Mr. Stearns.

(This report will continue in the next issue.)

UNEMPLOYMENT REGISTER

Members of this association, who are without employment, should forward a statement as to their qualifications and experience. This information will subsequently appear on these pages with an identifying key number. Employers are also requested to file with the American Dyestuff Reporter any vacancies which may occur in their business.

NOTICE TO EMPLOYERS

Personal Histories and Employment Records of the following applicants are on file at the office of the American Dyestuff Reporter. Prospective employers may examine them without obligation.

Key: A—Laboratory and research; B—Dyeing or printing; C—Finishing; D—Sales; E—Instruction; F—Executive.

A-2

Education—Graduate, Lowell Textile Institute, B.T.C., 1933.
Experience—Experienced as textile chemist, chemist-spotter, agricultural chemist and U. S. Army inspector on cotton, rayon, woolens and worsteds. Seeks research or control position with future. New England preferred.
Age 34; married; references.

A-3

Education—B.S. in chemistry, Lehigh University.
Experience—Experimental engineer and analytical chemist, 8 mos.; assistant superintendent of silk corporation, assisted in planning and directing production, in charge of laboratory, technical work, personnel, purchasing, etc., 2 years; inspector of ordnance material, to the present. Seeks position as chemical engineer or chemist.
Age 26; single; references.

A-B-C-F-3

Education—High school and full apprenticeship.
Experience—Practical Dyer and finisher. Long experience on specialties for men's wear trouser trade in cottons, cotton and rayon mixtures and cotton and Celanese. Is disposing of interests in progressive finishing plant and seeks position as manager, assistant manager or technical advisor. Thoroughly understands requirements of Quartermaster, especially on herringbone constructions.

B-1

Education—2 years high school; 4 years dyeing, 2 years chemistry, Philadelphia Textile School.
Experience—16 years experience as a dyer in one concern. Experienced on auto cloth, wool, cotton, silk, rayon and mixtures of all kinds. Broad experience in field gained by experience in one large, well-known mill qualifies this man, who is available for immediate employment as a dyer.
Age 37; married; 3 children; references.

B-2

Education—4 years high school; Chemistry course in college.
Experience—Assistant Overseer Piece Dyeing and Bleaching for 8 years. Experienced in matching of shades and supervising the operation of the continuous dyeing machine and jiggs, cotton and spun rayons.
Age 27; married; 1 child; references.

C-1

Experience—Experienced as assistant finisher, finisher and superintendent of finishing since 1923. Experience on automobile cloth, boucle overcoatings, high grade men's wear worsted, low grade woolens, medium grade plaid-back overcoatings, fleece finish overcoatings. Bolivias, kerseys, medium-grade men's piece dye suitings, uniform cloth, flannels, ladies' dress goods and coatings, government serge and elastique fabrics, marine wool, flannel shirtings.
Age 37; married, 3 children; references.

C-2

Education—Completed course in textile engineering and chemistry except for final half-year at Clemson College.
Experience—11 years of experience in finishing operations, including 8 years as overseer. Experienced on all types of cotton cloths. Experienced on pure finishes, backfilling, Sanforizing, pre-shrinking, and application of several types of water repellent finishes. Seeks position as overseer of finishing department.
Age 32; married; references.

CALENDAR OF COMING EVENTS

Meeting, New York Section, Downtown A. C., 19 West St., New York City, June 9, 1944. (Business Meeting). Henry Hird, Samuel Hird & Sons, will show the following color films: "Desert Life," "Packhorse Trips in the Canadian Rockies" and "Fishing and Hunting."

Outing, Rhode Island Section, Pawtucket Golf Course, Pawtucket, R. I., June 9, 1944. Golf tournament and Rhode Island Clambake. Dinner will be served only to those with paid reservations.

Annual Outing, Philadelphia Section, Cedarbrook Country Club, June 16, 1944

Meeting, South Central Section, June 16, 1944 (Tentative).

Meeting, Piedmont Section, Robert E. Lee Hotel, Winston-Salem, N. C., June 17, 1944. Speaker: Dean Malcolm Campbell, Textile Dept., North Carolina State College.

Meeting, Southeastern Section, Callaway Institute, La Grange, Ga., September 9, 1944 (Tentative).

Annual Meeting, Hotel Claridge, Atlantic City, N. J., October 12, 13 and 14, 1944. Auspices of Philadelphia Section.

Quantitative Determination of Redwood Bark Fiber in WOOL-REDWOOD FABRICS*

ERNEST R. KASWELL
Fabric Research Laboratories, Inc., Boston

INTRODUCTION

THE bark of the California Redwood tree has been used as a textile fiber for many varied but specific purposes. For some time, it has been blended with wool for use in blankets, overcoatings, and hat bodies.

In conjunction with the manufacture of such wool-redwood bark products, it is necessary to know the per cent composition of these constituents at various production stages.

The quantitative separation of wool and redwood bark fiber is based on their respective solubilities in acids and alkalis. In quantitatively separating wool-cellulose blends, two methods are usually employed:

(1) The cellulose is dissolved out in sulfuric acid, the wool remaining.
(2) The wool is dissolved out in caustic, the cellulose remaining.

It has been found that redwood is at least partially soluble in both of these reagents. Hence it becomes necessary to introduce solubility factors properly to determine fiber composition by either the sulfuric acid or sodium hydroxide technique.

EXPERIMENTAL METHODS

The American Association of Textile Chemists and Colorists' methods for the determination of wool and cellulose were used:

Wool by Sulfuric Acid Method[1] (Wool is insoluble; cellulose is soluble)

"Clean, dry, and weigh the sample (about 2 grams), immerse in 200 ml. of a boiling 1 per cent solution of sulfuric acid for 7 to 10 minutes, transfer to a Gooch filter and remove the excess acid by suction. Place the sample in 200 ml. of a 70 per cent solution (by weight) of sulfuric acid, at 100° F. (38° C.) and work for 15 minutes. Filter on a Gooch or Fritted Glass Filter (or 100-mesh screen) and wash well with cold water, then place the sample in a beaker of 2 per cent sodium bicarbonate at room temperature for 5 minutes. Filter again, wash well on the filter, dry, and weigh. This method dissolves all the ordinary fibers except wool which is left as a residue."

Potassium Hydroxide Method for Cellulose[2] (Cellulose is insoluble; wool is soluble)

"Clean, dry, and weigh the sample (about 5 grams), drop into 250 ml. of boiling 5 per cent potassium hydroxide and boil for 15 minutes, filter through a Gooch filter (or 100-mesh screen), wash with potassium hydroxide solution, wash with water, wash with dilute acetic acid, wash with water, dry, and weigh. This dissolves wool and silk; the residue is cotton or rayon."

Procedure A—Determination of Solubilities

The following samples were prepared and their solubilities determined in both sulfuric acid and potassium hydroxide.

100% Redwood
100% Clean mohair (extracted in carbon tetrachloride)
100% Low grade wool (extracted in carbon tetrachloride)
100% Wool top (extracted in carbon tetrachloride)

Results A:

Constituents insoluble in sulfuric acid:

Redwood	*Mohair*	*Wool (low grade)*	*Wool Top*
30.8% residue	98.98% residue	98.81% residue	97.74% residue
33.1	99.00	98.67	98.48
31.3	Av. 98.99% residue	Av. 98.74% residue	Av. 98.11% residue
32.6			
Av. 32.0% residue			

Constituents insoluble in potassium hydroxide:

Redwood	*Mohair*	0% residue (completely soluble)
78.13% residue		
79.71	*Wool* (low grade)	0% residue (completely soluble)
78.87		
78.27	*Wool Top*	0% residue (completely soluble)
Av. 78.75% residue		

Procedure B—Determination of Fiber Content of Known Samples

The following solubility factors were used in ensuing analyses of laboratory prepared blends of redwood-wool mixes:

In sulfuric acid:			
	Redwood	32%	insoluble
	Mohair	99%	insoluble
	Wool (low grade)	98.75%	insoluble
	Wool Top	98.1%	insoluble
In potassium hydroxide:			
	Redwood	78.75%	insoluble
	Wools	0.0%	insoluble
	Mohair	0.0%	insoluble

Laboratory prepared blends of the various wools and redwood were made up to contain 50 per cent of each constituent. By the use of the solubility factors, the percentage compositions were calculated. A typical example follows:

50% Mohair—50% Redwood in sulfuric acid
(Original blend contained: 1.0000 grams Redwood, 1.0000 grams Mohair)
x = weight of redwood
y = weight of mohair
Before analysis $x + y = 2.0000$ grams
After analysis residue weighed = 1.3481 grams
Therefore: $x + y = 2.0000$

$$.32x + .99y = 1.3481$$

and

$$.32x + .99y = 1.3481$$
$$.32x + .32y = 0.6400$$
$$.67y = 0.7081$$

*Excerpt from a research program sponsored by Pacific Lumber Company, San Francisco, California.

y. = 1.0568 grams mohair = 52.8%
x = 0.9432 grams redwood = 47.2%

Results B:

Analyses of 50% Redwood—50% Wool Blends—Sulfuric Acid Method

% Mohair	% Redwood	% Low Grade Wool	% Redwood	% Wool Top	% Redwood
52.8%	47.2%	50.8%	49.2%	50.8%	49.2%
54.4	45.6	52.4	47.6	52.0	48.0
Aver. 53.6%	Aver. 46.4%	Aver. 51.6%	Aver. 48.4%	Aver. 51.4%	Aver. 48.6%

Analyses of 50% Redwood—50% Wool Blends—Potassium Hydroxide Method

% Mohair	% Redwood	% Low Grade Wool	% Redwood	% Wool Top	% Redwood
49.2%	50.8%	49.7%	50.3%	51.0%	49.0%
49.4	50.6	50.3	49.7	51.2	48.8
Aver. 49.3%	Aver. 50.7%	Aver. 50.0%	Aver. 50.0%	Aver. 51.1%	Aver. 49.8%

Procedure C—Determination of Fiber Content of a Redwood-Wool Blanket

Using the solubility factors determined in Part A, a redwood-wool blanket was analysed for per cent composition by both methods:

Results C:

By the Sulfuric Acid Method: % Wool	% Redwood	*By the Caustic Method:* % Wool	% Redwood
87.1%	12.9%	88.3%	11.7%
88.2	11.8	88.0	12.0
Aver. 87.7%	Aver. 12.3%	Aver. 88.2%	Aver. 11.8%

DISCUSSION OF RESULTS

It may be seen that greater accuracy is obtained by means of the Potassium Hydroxide Method than by the Sulfuric Acid Method. The obvious reason is that with sulfuric acid, two correction factors are necessary while only one is necessary by the potassium hydroxide method. In addition, it is probable that the solubility properties of redwood (coming from one source) are less variable than wools which come from many sources.

Therefore, it is to be recommended that the caustic method be used for the separation of wool-redwood blends.

One consideration which should not be overlooked is the possibility that the correction factors for a wet-processed piece of fabric might be different from those of an unprocessed fabric. For example, if a fabric is subjected to mild alkali or acid during manufacture, part of the soluble constituents might have been removed. If this were the case and then the above listed factors were used, the results would obviously be in error.

All data reported herein are based on a conditioned regain basis of 65 per cent relative humidity and 70° F.

BIBLIOGRAPHY

1, 2. American Association of Textile Chemists and Colorists Yearbook XIX, pages 277 and 278 (1942).

TRADE NOTES • NEW PRODUCTS

• NATIONAL CALIBRATION SERVICE

Foster D. Snell, Inc., Consulting Chemists and Engineers, 305 Washington St., Brooklyn, N. Y., announces the purchase of National Calibration Service, Brooklyn, N. Y., to be operated as a separate department by the Snell organization. The principal business of National Calibration Service was verification of vertical compression and tensile testing machines. Foster D. Snell will continue to service those firms having contracts with the National Calibration Service and will extend the service to other clients.

• THEORY-PRACTICE SEMINARS

Edward R. Schwarz, F.T.I., Professor in Charge of the Textile Division at the Massachusetts Institute of Technology was the speaker at the first of a series of Theory-Practice Seminars inaugurated by Fabric Research Laboratories, Inc. for the purpose of advancing the skill and knowledge of its staff members in the field of Textile Research.

The subject of Professor Schwarz's lecture was "What, How, Why in Textile Research" and dealt with the proper approach to the research problem.

The seminar was held at Fabric Research Laboratories, Inc. in Boston, Massachusetts and was the first of a series covering all phases of Textile Research and Technology. Future weekly meetings will be devoted to advanced techniques and methods as related to physical, chemical, and microscopical phases of textile research. Emphasis will be placed on the theoretical aspects of the many tests involved as well as the application of the theory to laboratory procedures.

As one of the functions of the Fabric Research Laboratories, Inc., is to improve and develop manufacturing processes, consideration of the interpretation of laboratory findings with the view to eventual plant application will be stressed. Such interpretation requires an understanding of modern mathematical statistical methods which will be covered in considerable detail. In addition to the subjects enumerated above, staff members of the laboratories will present papers, from time to time, covering specific phases of various projects under development and also on subjects of pertinent interest in the current literature.

• MACHINERY CONTRACTS

Many manufacturers of textile machinery have been offered large contracts for machinery to be delivered at the cessation of hostilities or when WPB releases critical materials.

In an effort to establish a policy that will be entirely equitable to both the buyer and the seller, H. W. Butterworth & Sons Company have formulated the following plan:

The H. W. Butterworth & Sons Company have agreed to accept orders, knowing that the price quoted might be entirely out of line at the time of manufacture. Their plan is to quote the price of the machine, certifying the value of the material and the total amount of labor and burden at the time the quotation is made.

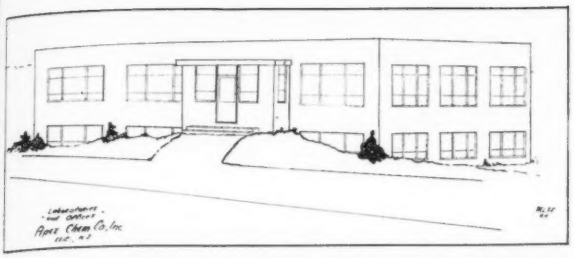
In the event that either of these items are less than the originally quoted price at the time of completion and shipping of the machines, the purchaser will receive a credit for the difference. In case there is an increase in cost in either of these two items, the difference will be an additional billing by Butterworth to the purchaser. In this way, both the seller and the purchaser are protected.

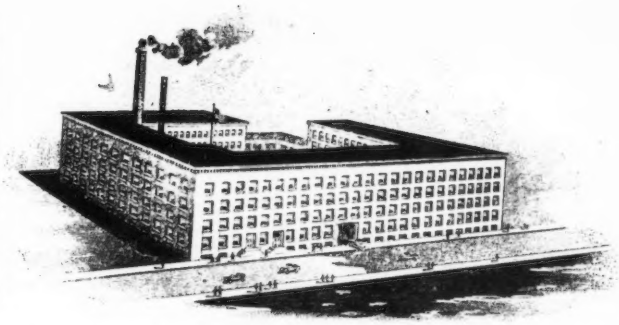
Orders accepted by H. W. Butterworth & Sons Company for postwar delivery are not subject to cancellations.

• APPOINTED MYCOLOGIST

Announcement was made today by Arthur Minich, Vice President of Nuodex Products Co., Inc., Elizabeth, New Jersey, of the appointment of Milton Goll, to the post of Mycologist in charge of the company's newly established Microbiological Laboratories.

Mr. Goll will supervise the evaluation of various fungicides, bactericides, and phytocides on wood, fabric, cordage and other materials when treated with metallic naphthenates, which the company manufactures, as well as other fungicidal products which are in the development stage in the company's Research Laboratories.





Above—New laboratory and office building of Apex Chemical. Right—New buildings of Kali, housing offices, laboratories and production machinery.

• NEW APEX BUILDING

Construction of the new laboratory and office building of the Apex Chemical Company, Inc., 200 South First St., Elizabeth, N. J., has been authorized by the War Production Board. Occupancy of the building will take place sometime in June. In the new building will be the office of the Purchasing Agent, the private laboratories of the Director of Research and the Chief Chemist, the individual offices of each two-man research team as well as a large general laboratory for the research staff. Smaller rooms will be equipped for specialized work in which the firm has been engaged for the past forty years. These laboratories will cater to the problems of the individual fields the company solicits as, for example, among the specialists manning these facilities will be the textile, leather, and paper chemists. Analytical and control work will be maintained in laboratories housed in the main buildings. Executive and sales offices remain at 225 W. 34th St., New York City.

• NEW WATER REPELLENT RAYON FABRIC

The Du Pont Company announces the manufacture of a new cloth which is washable as well as weather-protected. For the first time, it is stated, the advantages of "Zelan" durable repellent and the Sanforized shrinkage control process are successfully combined on a vat-dyed, spun rayon fabric.

The new fabric, called Jove Poplin, is a weave of 70 per cent rayon yarn stabilized with 30 per cent cotton by the Austinized Process. It is introduced by Traub, Lyons, Oppenheim, New York City, originators of this process.

Rainwear made of this treated fabric not only sheds rain and resists spotting, due to the water repellent treatment, but can be safely washed at home because Sanforizing keeps the garment from shrinking out of shape. The "Zelan" finish is said to retain its effect through many washings, saving the cost of reprocessing. Vat dyes, the fastest known to science, assure long-lasting color. Laundering does not spoil the soft drape and attractive luster of the fabric. Density and fluffiness of the cloth are said to increase its water repellency.

Tests of the fabric made by the Du Pont Company with the new laboratory rain tester, which measures impact penetration resistance, reveal that the cloth equals or surpasses in this respect equivalent weight cotton fabrics now on the market.

• NEW MANUAL ON WAR CONTRACT TERMINATIONS

Copies of the booklet, "How One Company Organized to Handle War Contract Terminations," may be obtained without charge from Lyon Metal Products, Inc., Aurora, Ill. This booklet is a step by step, graphic presentation of that subject. It gives a suggested breakdown of termination duties by departments. It sets time limits for each department and illustrates 14 practice-proved forms which the company designed to expedite the work. The preparation of this book was suggested after it had been reviewed by Chicago Ordnance, Army Service Forces at Washington and by the National Association of Manufacturers.

• NEW EDITION

The National Fire Protection Association has announced the publication of a new and revised seventh edition of its "Table of Common Hazardous Chemicals." Developed by the N.F.P.A. Committee on Hazardous Chemicals and Explosives in cooperation with the American Chemical Society, it represents the most authoritative information available to date, it is stated. The 1944 revision includes data on a number of chemicals not previously in general commercial use, which are now widely used in war industry. Included in the table are data on 98 hazardous chemicals with respect to their fire hazard, life hazard, recommended storage, and proper methods of fire fighting. Copies of this table may be obtained from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass., at a cost of thirty cents each.

• NEW KALI PLANT

To accommodate the expanding business of the company, Kali Manufacturing Company has occupied extensive new buildings, in which are located the offices, laboratories and production machinery of this chemical concern. The new address is 425 Moyer Street, Philadelphia, 25, Pa.

The activities of the Company include the manufacture and distribution of chemicals for many industries, including textile, metals, paper, etc.

Many exclusive formulae have been developed in the Kali laboratories as a result of intimate contacts with manufacturers of products essential to the war effort or in civilian demand, it is stated.

The officers of the Company are: S. G. Davenport, President and Treasurer, N. S. Branegan, 1st Vice-president, J. A. Branegan, Jr., 2nd Vice-president, C. M. Winch, Secretary, and E. W. Wall, Assistant Treasurer.

Kali Manufacturing Company was founded thirty-four years ago and is now widely known in industrial circles throughout the country for its technical approach to chemical problems arising in the processing of new or unfamiliar materials.

• LEEDS AND NORTHRUP CATALOG

Anyone in steam plant or process industry who is concerned with preventing contaminated condensate from reaching boilers and prime movers, and who does not have Leeds & Northrup Company's catalog, "Micromax Condensate-Purity Instruments for the Steam Plant," should be interested in the 23-page, revised edition of this publication just issued.

Embodying only minor changes in text, the catalog describes how condensate is sampled continuously by means of a conductivity cell, and its purity indicated and recorded automatically by means of a Micromax recording instrument. When contamination is present, the recorder can flash a signal or sound an alarm so that the operator can correct the condition. Instead of operating a signal, or in addition to operating one, the Micromax instrument can (if so equipped) control a valve and

automatically divert contaminated condensate to waste. A simple L&N Signalling Conductivity Controller, which neither indicates nor records—just signals and controls—also is listed in this publication for the first time.

Write for Catalog N-95-163, "Micromax Condensate - Purity Instruments for the Steam Plant," Leeds & Northrup Company, 4934 Stenton Avenue, Philadelphia 44, Penna.

● ELECTION OF OFFICERS, U.C.C.

At the annual meeting of the stockholders of Union Carbide and Carbide Corporation, held April 18, Ralph R. Browning, Paul P. Huffard and Homer A. Holt were elected to the Board of Directors. Mr. Browning has been associated with units of U.C.C. for 31 years and Mr. Huffard for 35 years. Both have been vice-presidents of the Corporation since 1939. At a meeting of the Board of Directors, held April 25, Fred H. Haggerson, vice-president and director, was elected President of U.C.C., succeeding Benjamin O'Shea who had been president since 1941 and who now becomes Chairman of the Board. Mr. Haggerson has been associated with U.C.C. for 25 years.

Fred H. Haggerson

● ARMY-NAVY E AWARD

General Aniline & Film Corporation announces that the employees at its Grasselli Plant at Linden, New Jersey, will be awarded the Army-Navy E for "fine achievement in the production of war equipment."

This unit of General Aniline & Film Corporation manufactures industrial organic chemicals, coal tar intermediates, dyes, carbonyl iron powder, plastic materials, tanning compounds, wetting agents and synthetic soaps for the armed forces. Its dyes are widely used for uniforms and equipment for the armed forces, it is stated.

● BRUSHING AND FOLDING MACHINE

A new combination brushing and folding machine has been designed and built by Birch Brothers, Inc., Somerville, Mass. The machine is designed to prepare woolen and worsted fabrics for the wet finishing room. The goods are spread and brushed to remove loose threads, dust, flocks and other foreign matter and then folded uniformly, ready for the finishing room. The principal purpose of the machine is to eliminate this foreign matter being carried to the fulling mills and felted into the fabric.

● LEEDS & NORTHRUP CATALOG

To describe its new system of combustion control designed especially for the smaller industrial or municipal power plant, Leeds & Northrup Company has just issued a new catalog, "L&N Combustion Control, Type P." For complete information about this system, write for Catalog N-01P-163, "L&N Combustion Control, Type P," Leeds & Northrup Company, 4934 Stenton Ave., Phila. 44, Pa.

● AWARDED STAR

Employees of the Front Royal, Va., plant of the American Viscose Corporation have been awarded a star for their Army-Navy "E" pennant, signifying that they have continued their record of fine achievement in the production of war material during the six-month period since the pennant was awarded to them. The plant manufactures rayon staple fiber and higher-strength rayon for use in airplane, combat and other heavy-duty tires.

● NEW ANSUL QUARTERS

A new office, providing much needed additional room, will be opened in New York City by Ansul Chemical Company, Marinette, Wisconsin. The company has leased space in the Lincoln Building at 60 East 42nd Street. Dugas Engineering Corporation, an Ansul subsidiary, will occupy the same quarters. T. R. Kearney will handle the Ansul line and Glen Stratton will be in charge of Dugas activities.

● APPOINTED DIRECTOR OF PUBLIC RELATIONS

The appointment of Harold Brayman to be Director of the Public Relations Department was announced by E. I. du Pont de Nemours and Company. He succeeds the late Theodore G. Joslin, who died April 12.

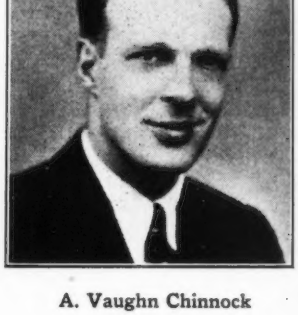
● NEW BOOKLET

The American Viscose Corporation has issued a booklet "Progress—1943," which describes a number of the developments that took place during the year in connection with the "Crown" Tested Plan, under which fabrics containing the company's rayon are tested for service qualities.

New test requirements for "Crown" Tested fabrics were established in September, 1942, and during the year that followed a very great amount of work was done in connection with developing fabrics that would meet these higher standards. The booklet contains descriptions of a number of typical cases in which the service qualities of fabrics were improved to meet the standards required by the plan. This was achieved in each case by cooperation beween the technicians of the American Viscose Corporation and of converter and finisher licensees operating under the plan.

● HOOKER APPOINTMENT

The Hooker Electrochemical Company announces the appointment of A. Vaughn Chinnock to its Sales Development Department with headquarters in Niagara Falls, New York. Mr. Chinnock, a member of the American Chemical Society, graduated from Cornell University in 1932 and taught science for eight years. For the past four years he has been in the Research and Development Department of the Hooker Company at its Niagara Falls plant, where he has been actively engaged in pilot plant work in connection with developing new products to the commercial scale.



A. Vaughn Chinnock

● CONVERSION OF EQUIPMENT

The American Viscose Corporation is rapidly completing installation and conversion of equipment for producing higher-strength viscose rayon yarn for use in tire cords and fabrics, as part of the War Production Board's program to provide sufficient rayon for airplane and military tires and for the manufacture of synthetic rubber tires, the company announced recently.

Final plans call for a total annual production by the company of approximately 110,000,000 pounds of higher-strength rayon yarn for use in tires. This represents nearly one-half of the approximately 240,000,000 pounds of rayon tire cord yarn planned for in the War Production Board's program.

The greater part of the company's output will be produced at its Front Royal, Va., plant, which is being enlarged to manufacture 82,000,000 pounds of rayon tire cord

annually. The new facilities at this plant will be in complete operation, it is expected, before the end of the first quarter of 1945. The company's Lewistown, Pa., plant, which is converting existing equipment to make approximately 22,000,000 pounds annually of tire cord yarn, expects to commence production of this type of yarn about June 1. The Marcus Hook, Pa., plant will produce approximately 6,000,000 pounds of tire cord yarn annually and conversion of equipment for this purpose was supposed to be completed May 1.

• TEXTILE FOUNDATION ANNUAL MEETING

The Annual Meeting of the Board of Directors of the Textile Foundation was held recently in Washington, D. C. Members of the Board are Franklin W. Hobbs of Boston, Mass., Frank D. Cheney of Manchester, Conn., Donald Comer of Birmingham, Ala., Jesse H. Jones, Secretary of Commerce and Claude R. Wickard, Secretary of Agriculture.

Franklin W. Hobbs was unanimously reelected Chairman of the Board for the 15th consecutive time. Frank D. Cheney continues as Treasurer and Edward T. Pickard as Secretary and Assistant Treasurer.

The appointment of a committee to study certain developments in the field of textile education was authorized. The particular phases to be analyzed and appraised have to do with plans under which research workers could receive part time instruction at graduate level in scientific and engineering subjects. Other angles to be covered are ways and means of providing more effective methods for teaching textile economics in college departments. A further examination of the possible post-war demand for a concentrated one year course in textile economics and management to be available for college graduates is also included. Dr. F. M. Feiker, Dean, School of Engineering, George Washington University, who for a number of years has acted as the Foundation's consultant on textile education will continue in that capacity.

• NYLON EXPANSION PROGRAM

Upon completion of its projected nylon expansion program, the Du Pont Company plans to be in position to deliver 22 to 23 million pounds of hosiery yarn per year—enough to make about 450 million pairs of women's stockings—Robert A. Ramsdell, director of sales of the company's Nylon Division, announced recently.

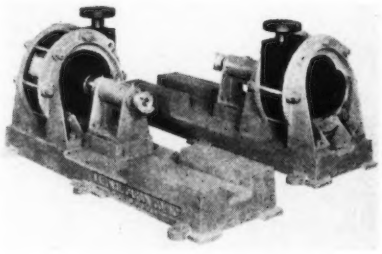
Speaking at the Eighth Annual Hosiery Industry Conference, held at the Waldorf-Astoria, Mr. Ramsdell said: "Assuming satisfactory conditions, our future plans very definitely call for an enlargement of our nylon production at our two existing plants, at Seaford, Del., and Martinsville, Va., as well as the building of an additional plant at a site we have recently acquired near Chattanooga, Tenn." Completion of this program he said, may take a year to 18 months, from the time it starts.

The Nylon Division has surveyed the industry, which reports that the facilities for twisting yarns, pre-boarding, dyeing and finishing are ample to take care of the increased nylon yarn volume and that much of this equipment has been used on nylon and rayon during the war.

"Our plans include a considerable volume of yarn production," Mr. Ramsdell observed, "for other established industries such as men's and children's hose, weaving, flat knitting, sewing thread, braid, narrow fabrics, cordage, etc., many of which industries processed nylon, silk, etc., before the war or have become equipped to handle nylon in filling wartime contracts."

• CENTRIFUGAL PUMP

A corrosion resistant centrifugal pump designed by National Carbon Company, Inc., for the chemical process industries is now out of the "experimental" stage and has been standardized in three sizes.



Centrifugal pump designed by National Carbon.

Constructed of chemically inert "Karbate" material, which is a carbon stock made impervious to seepage of liquids under high pressure, the pumps have shown excellent performance and serviceability under plant operating conditions in a variety of chemical applications, it is stated.

Their resistance to practically all corrosive fluids, including acid mixtures such as HCL and H_2SO_4, is said to give the "Karbate" pumps a much longer life span than can be achieved by pumps constructed of other materials and at the same time avoids metallic contamination of liquids being handled. "Karbate" pumps may be used without danger where sudden variations of fluid temperature induce thermal shock.

The largest of the three pumps operates against a 100-foot head. They are so engineered that from inlet to outlet the liquids are in contact with the "Karbate" material. The "Karbate" sleeve covers the steel shaft, and is cemented to the impeller disc rather than to the shaft itself. The shaft end is covered with the "Karbate" cap. The pumps are sealed with a rotary faced seal, thereby eliminating the maintenance problems inherent in stuffing boxes.

• NEW TYPE SYNTHETIC RUBBER

A new type of synthetic rubber, unique because it promises to be especially suitable for use in making heavy-duty tires for trucks, buses and even military vehicles, has been developed by the Research Department of The Mathieson Alkali Works, G. W. Dolan, president of the company announced recently.

"The new rubber is strong, tough and resistant to cuts and abrasion," said Mr. Dolan. "But its outstanding characteristic is that, unlike GR-S, formerly known as Buna-S, which constitutes most of the rubber thus far produced in this country, the Mathieson rubber withstands elevated temperatures."

It is stated that reports of independent laboratory tests show that the Mathieson rubber has greater resistance to heat, moisture, oil and kerosene than GR-S, and less permeability to gases. In certain of these respects, the laboratory tests are said to indicate superiority to natural rubber as well.

"The Mathieson rubber is made of butadiene and a new chemical produced from readily available raw materials," said Mr. Dolan. "Its cost is expected to be about the same as that for GR-S on the same scale of manufacture. Our rubber is still in the development stage and, of course, plans for its production cannot be revealed," he concluded.

• APPOINTED ASSISTANT RESEARCH DIRECTOR

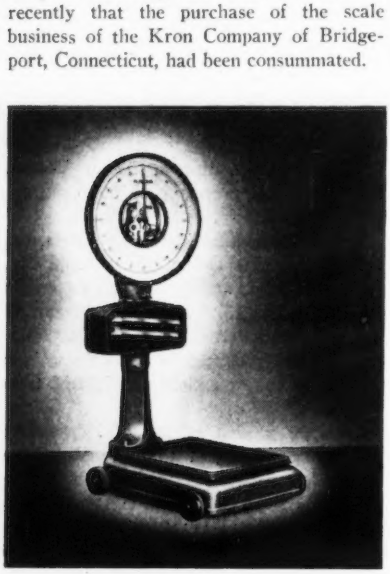
The appointment of Neil A. Sargent as assistant research director of the Merrimac Division of Monsanto Chemical Company was announced recently by D. S. Dinsmoor, Vice-President and General Manager of the Division. Mr. Sargent will share administrative and supervisory responsibilities with A. H. Bump, also an assistant research director under W. S. Wilson, Director of Research. Mr. Sargent has been associated with Monsanto and predecessor companies since 1917 in engineering and research capacities and most recently has been in charge of pilot plant operations and inorganic research.

• MONSANTO PROMOTION

The promotion of Dr. Robert D. Swisher to serve as group leader in charge of organic chemical research for the Merrimac Division was announced recently by Monsanto Chemical Company. Dr. Swisher has been associated with Monsanto since 1934 doing research in organic chemicals.

● YALE BUYS KRON SCALE BUSINESS

W. Gibson Carey, Jr., President of the Yale & Towne Manufacturing Company, Chrysler Building, New York, announced recently that the purchase of the scale business of the Kron Company of Bridgeport, Connecticut, had been consummated.



Kron Scale

According to the announcement no changes in the line are contemplated, except for such natural developments which grow out of industry's needs. The scale line now includes a comprehensive range of bench, platform, abattoir, hopper, crane and hoist types and capacities for weighing and counting parts or products, batching concrete, asphalt and numerous other materials in their dry state, for measuring flow or consumption of fuel oil and other liquids, testing tensile strength of various products, the pull of electric and fuel motors and so on. Certain models are equipped with electronic devices for special uses, or a register which prints a weight ticket or records on tape.

The facilities and personnel of the Kron Company will be maintained in Bridgeport as heretofore, together with the sales and service organization, but all will be under the general direction of the Philadelphia Division of Yale & Towne Manufacturing Company.

● NEW BRISTOL BULLETIN

The Bristol Company announces a new bulletin, No. B. 220, describing its new line of Free-Vane Electronic Controllers for automatically controlling temperature, pressure, liquid level and humidity. The bulletin gives wiring diagrams, principle of operation and general descriptions and features of the new instruments. Copies may be obtained by writing to the Bristol Company, Waterbury 91, Conn.

● W.P.B. REPORT

Because of military requirements for vinyl resins, little or none can be spared for civilian uses and there is no immediate prospect for an improvement in the situation, the War Production Board reported today.

The situation regarding plasticizers is even tighter, officials of WPB's Chemicals Bureau said. Chrome pigments, which are now in short supply, are expected to be even more difficult to obtain in the next few months, they asserted, while the situation regarding castor oil and organic solvents is somewhat easier.

These reports were given at a meeting of WPB's Pyroxylin and Vinyl Resin Coated Fabric Industry Advisory Committee.

WPB officials reported that there was little prospect of improvement in the present limited textile situation. Wide drill and wide sateen for making coated fabrics for baby carriages are virtually unobtainable, they said.

A member of the committee reported that the production of coated fabrics is not hampered by lack of coating capacity but rather by a shortage of raw materials. It was frequently impossible to fill last minute military orders because of lack of inventory, he asserted. Officials said the Chemicals Bureau aims to provide dealers with a 30-day inventory for specific end uses as soon as the supply situation improves.

A War Department representative, recently returned from England, reported on the process used by the fabric coating industries there. He said the shortage of raw materials in England is much more acute than in the United States.

● BROWN INSTRUMENT COURSES

Final applications are now being received by the Brown Instrument Co., Training School Division, Philadelphia, for the second 1944 industrial instrument maintenance and repair courses which began May 8 and will close August 4. Instruction is offered by the Brown company gratis to customers of the company who wish to send students to any of the various classes which run consecutively up to the closing date.

In announcing the new courses the Brown company made known that the length of time a student will expend on a subject will depend on his or her knowledge of the subject and technical background.

The new courses and the dates each will start are: Millivoltmeter Type Pyrometer, May 8 to 25; Mechanical Potentiometer Pyrometer, May 26 to June 14; Continuous Balance Electronic Type Pyrometer, June 15 to June 22; Electrically Operated Automatic Control, June 23 to June 30; Flow Meters, July 3 and 5 to July 12; Thermometer-Pressure Gauge-Hygrometer, July 13 to July 20; Air Operated Automatic Control, July 21 to July 28; C02 and Analygraph, July 31, and Resistance Thermometer and Tachometer, August 1 to 4. All the subjects will include laboratory practice.

● APPOINTED SALES MANAGER

The Calco Chemical Division of American Cyanamid Company has appointed Mr. Sam Klein the organization's Western Sales Manager. Mr. Klein will establish his offices in Chicago. Employed in the dyestuff industry since 1907, Mr. Klein was with A. Klipstein & Company and Read Holliday & Sons before joining Calco in 1917. For the past 20 years he has been in charge of Calco's Lake Department.

Sam Klein

He is an active member of the New York Paint, Varnish & Lacquer Association, the New York Paint Club, the Steering Committee and the Class B Membership Committee of the National Paint, Varnish & Lacquer Association. He also holds membership in the Salesman's Association of the American Chemical Industry, the A.A.T.C.C. and the Drug & Chemical Club of New York.

● 1944 FALL WOOLEN AND RAYON CARDS

Copper and nasturtium shades, olive and mossy greens, cocoa and chocolate tones, plum strawberry and raspberry versions and greenish sea blues are prominent among the basic color types presented in the 1944 Fall Woolen and Rayon Cards, which The Textile Color Card Association has just released to the trade. Gold, tangerine, lime, lilac, aqua and strong pinks are stressed among the medium tonalities.

● U. S. ARMY STANDARD COLOR CARD

The Third Edition, revised 1944, of the U. S. Army Standard Color Card for the Official Standardization Shades of Olive Drab, Khaki and Drab Sewing Threads, which incorporates the new standard in-

stituted by the Quartermaster General of the U. S. Army for the thread color, U. S. Army Olive Drab Dark Shade, has just been issued by The Textile Color Card Association as authorized by the Quartermaster General.

In this revised card, it was explained by Margaret Hayden Rorke, managing director of the Association, the new color is designated as T-1 and is darker than the former Shade T, which it now replaces. It is the color used for sewing items of Officers' clothing in Olive Drab (Shade No. 51).

The five remaining thread colors, Shade P (U. S. Army Khaki), Shade Q (U. S. Army Olive Drab), Shade R (U. S. Army Olive Drab), Shade S-1 (U. S. Army Olive Drab) and Shade U (U. S. Army Drab) remain the same in the new edition, except that new cable numbers, 66013 to 66018 inclusive, are given to all shades.

As previously noted when the first two editions were brought out by the Association, this card shows the six authorized shades in thread tassels and lists the various items of U. S. Army clothing and equipage for which these sewing threads are used. The card has wide distribution among the Quartermaster Depots throughout the country, as well as thread manufacturers and other firms making clothing or equipage for the U. S. Army.

• ELECTED VICE-PRESIDENT

Marlin G. Geiger presently a Vice-President and Director of Westvaco Chlorine Products Corporation and Resident Manager of that company's South Charleston plant has been elected Vice-President and Director of the United Chemicals, Inc. Mr. Geiger will continue as Resident Manager of the Westvaco South Charleston plant.

• DYEING OF ACETATE RAYON FABRICS

A new method of dyeing acetate rayon fabrics, said to give such fabrics dyed in a number of colors a high degree of resistance to atmospheric gas fading, has been developed by the North Carolina Fabrics Corporation, Salisbury, N. C., in cooperation with technicians of the American Viscose Corporation, rayon producers, and dyestuff manufacturers.

Fading of colors caused by acid gases given off from fuel combustion and other sources has been a cause of frequent complaint in the past, and extensive research work has been carried out in recent years in an effort to overcome it.

To date a line of six colors has been developed by North Carolina Fabrics Corporation, all of which are said to show no fading or color loss after 60 hours' exposure to atmospheric gases under test conditions.

The tests are conducted in accordance with the methods established by the A.A.T.C.C. and the 60-hour period is considerably longer than the standard test requirement set by the Association.

These fabrics are said to be the first 100 per cent acetate rayon fabrics to meet the American Viscose Corporation's "Crown" Tested Plan requirements for washable fabrics. This means that their colors are resistant to sunlight, crocking and perspiration, as well as to atmospheric gas fading.

The A.A.T.C.C. test for atmospheric gas fading is accomplished by the use of a relatively new type of apparatus. The equipment for making gas fading tests consists essentially of an air tight glass door with vents at the bottom for the inflow of gases of combustion from a Bunsen burner and an outlet for these gases. The burner is provided with a fish tail to give a conical flame with a blue bottom and yellow tip, which is adjusted at a distance from the inflow gas flue so as to regulate the temperature of gases in the chamber, not to exceed 140° F.

Baffle plates with holes drilled in the top are placed opposite each other in the chamber in a manner to allow suspension of fabrics being tested from rods placed through holes horizontally, and air circulation is accomplished by a fan.

A control sample of known service experience is run along with these test samples. One test sample is the original fabric before dry cleaning or laundering, the second is the fabric after dry cleaning, and the third is the fabric after laundering. The duration of the test is limited to the time required to produce a fading in the control piece.

• NEW SOAP INGREDIENT

A new soap ingredient developed from petroleum was announced recently by the Du Pont Company, which is undertaking plant expansions to turn it out by the hundreds of thousands of pounds.

Mixed with the other constituents of soap in a proportion of about one to two, the new material is said to remove dirt, oil and grease in any kind of water, salt or fresh, cold or hot, hard or soft. Soldiers aboard transports and on the atolls of the South Seas, where ocean water is used for bathing and laundering, have found the soap very efficient for these purposes.

The new ingredient is a synthetic detergent, or "soapless soap." It is a sulfonated product and is designated MP 646 by Du Pont's Fine Chemicals Division, which manufactures the material at the Chambers Works, Deepwater Point, N. J. The chemical is sold to soap manufacturers, who use it in the manufacture of toilet soap.

• MATHIESON PRESIDENT HEADS GREATER NEW YORK FUND CHEMICAL DIVISION

George W. Dolan, President of Mathieson Alkali Works, has accepted the Chairmanship of the Chemical Division for The Greater New York Fund's 1944 Campaign, now under way, it has been announced by Herbert E. Smith, President of United States Rubber Company, Chairman of the Manufacturing Group of the Campaign.

The Fund's appeal is directed exclusively to business firms and employee groups for the purpose of raising a minimum of $4,500,000. This sum represents an essential share of the $22,250,000 in voluntary hospitals, health and welfare agencies to maintain their present level of service to the community.

• ADDRESSES A. I. C.

Dr. Donald Price of the research staff of the Interchemical Corporation addressed the Baltimore Chapter of the American Institute of Chemists at Loyola College, Baltimore, Md., on April 27th on the subject, "The Chemistry of Surface Active Agents." The meeting which was presided over by Dr. A. H. Warth, Chemical Director, Crown Cork & Seal Company, Chairman of the Chapter, was preceded by a dinner and business meeting.

Dr. Price sketched the historical development of surface active agents in the textile industry, discussed the relation between surface activity and structure in these compounds and took up the chemistry of the better known types of surface active agents now in commercial use.

• APPOINTED PERSONNEL MANAGER

Dr. H. Wade Rinehart, chemist with the Du Pont Company for the past 18 years, has been appointed to the newly established position of personnel manager of the company's Rayon Technical Division.

The Technical Division of the Rayon Department is engaged in research and engineering, as well as in product development, in the field of fibers and films. The present materials are viscose, acetate nylon and cellophane, and pioneering research is being conducted on related substances.

A native of Ohio, he received his bachelor's degree at Oberlin College and his Ph.D. at Yale University, where he taught organic chemistry for four years before joining the Du Pont Company in 1926. His first work was that of a research chemist with Lazote Inc., the Du Pont subsidiary which later became the Ammonia Department. Later he entered technical sales work and in 1939 joined the Service Department.

• BOOK REVIEWS •

Illustrated Technical Dictionary. Edited by Maxim Newmark, author of a Dictionary of Science and Technology in English, French, German and Spanish. Published by The Philosophical Library, New York City. 1944. Price $5.00.

This volume contains standard technical definitions of current terms in the applied sciences, graphic and industrial arts, and mechanical trades; including air navigation, meteorology, shipbuilding, synthetics and plastics; with illustrations, technical data, and interconversion tables.

The plan of this dictionary is to supply a wide and representative selection of officially approved, standard definitions promulgated by various United States engineering, technical, trade and industrial organizations, as well as by government agencies. So overwhelming has been the response by these organizations and agencies to requests for material, that it has been possible to include standard definitions in all of the major subject fields covered. In only a few minor fields where standard definitions do not exist or are not available owing to the war emergency or copyright restrictions, secondary sources have been used, in each instance, however, of such authority as to insure accuracy and general acceptance.

The editor has selected terms dealing with standards and measurements, and the practical applications of mathematics, chemistry, and physics has not been limited. Similarly, terms dealing with aeronautics, electricity, radio, the chemistry of synthetics and plastics, (especially synthetic rubber), automotive mechanics, and shipbuilding have been included to the limit of available material.

Broad coverage has also been given to fields of current importance to the war effort, such as aerodynamics of flight, air and marine navigation, meteorology, photography and surveying.

This volume will be found in use in vocational schools, in plants engaged in defense work and in technical laboratories. Where thought advisable many illustrations have been introduced.

The Chemistry of Cellulose. By Emil Heuser of the Institute of Paper Chemistry. 660 pages, 112 figures and graphs and 87 tables. John Wiley & Sons, Inc., New York. 1944. Price $7.50.

The author has succeeded in writing a very comprehensive book on the subject of cellulose chemistry, and at the same time has kept it within reasonable bounds. He states in the preface that it is a compendium and critical digest of the literature of the Chemistry of Cellulose with due consideration of the microscopic and sub microscopic structure of cellulose fiber, emphasis having been laid upon the scientific aspect rather than the practical application of the subject. For this latter reason the book will serve as an excellent basis of study for those who are quite familiar with the practical side of the many applications of cellulose chemistry and wish to go into the subject much further from the purely scientific angle.

The book may also be regarded as a text book inasmuch as it has been written from the point of view of presenting the subject matter in a systematic and simple manner to the student who is looking for guidance in his studies, and who hopes to find an unbroken and coherent treatise rather than a number of individual and loosely connected chapters.

All references have been brought well up to date, some being as late as the end of October, 1943. This book should be in the library of every paper and textile chemist having to deal with cellulose and its many applications both for reference and study.

• Classified Advertisements •

The rate for "Position Wanted" advertisements in this column is 2 cents a word—with a minimum of 50 cents per insertion. For all other types of advertisements—i.e., help wanted, machinery or supplies for sale—the rate is $6.25 per column inch or less per insertion.

WANTED: Chemist-colorist by Dyestuff Manufacturer for standardization and application laboratory. Location—Massachusetts. Textile graduate preferred. State experience if any. Box No. 536.

POSITION WANTED: Experienced manager in the dyeing, printing and finishing industry desires to contact responsible organization with vision and foresight in the development and production of special finishes for the post-war trade. Will consider representing and demonstrating for a reliable chemical house. South territory preferred. Box 537.

WANTED: TEXTILE CHEMIST. There is an opening for a technically trained man in the sales organization of a company having national distribution in an extended line of chemicals now entering the textile field with specialized products. Association with cotton and wool finishing and previous sales experience desirable. Headquarters —New York area. All correspondence confidential. Box 546.

POSITION WANTED: Textile chemist with extensive experience in the textile chemical and textile industries desires responsible position with progressive company in either field. Sales experience. Honorable Army Discharge. Box 556.

WANTED: Laboratory assistants for our New England plants. State experience, education and salary expected. Write to W. H. Cady, U. S. Finishing Co., Norwich, Conn.

POSITION WANTED: Salesman, 36 years old, 15 years experience in all phases of textile dyeing and processing. Textile school graduate. Draft status 2-B. Location immaterial. Full details on request. Box 557.

WANTED: Experienced dyer, 30 to 40 years of age, for skein and package dyeing of silk, nylon, cotton, and other synthetic threads. Chemistry background and education important. Capable of handling men in dyehouse and supervising laboratory work. Plant in New England. Box 558.

WANTED: Sales Representative by manufacturer of dyes and auxiliary products. Sales office and laboratory in Charlotte, N. C. Give draft status and details of experience. Box 559.

NOTE

Essential employees need release statement. Employees who are to be hired for critical occupations need release statement and U. S. E. S. consent.

WILL YOUR COLORS MATCH?

THIS IS THE YEAR the United Nations are asked to show their winning colors.

And that challenge holds just as strongly for the home front as it does for our fighting men.

The textile industry, for instance, has a three-fold aim in getting behind the victory drive. First, it must complete its commitments to the armed services. Second, it must supply more goods for essential civilian consumption this year. Third, war restrictions notwithstanding . . . *quality* must be maintained.

In serving the textile industry, Calco has but one policy. Calco dyes must maintain their reputation as the industry standard.

One measure of the validity of this policy: The good-will we have won in the eyes of textile men over the years. Another measure . . . in serving the armed forces directly, we have already been awarded a *second* star for our Army-Navy "E" pennant for work completed to date on '44's schedule.

CALCO CHEMICAL DIVISION • AMERICAN CYANAMID COMPANY

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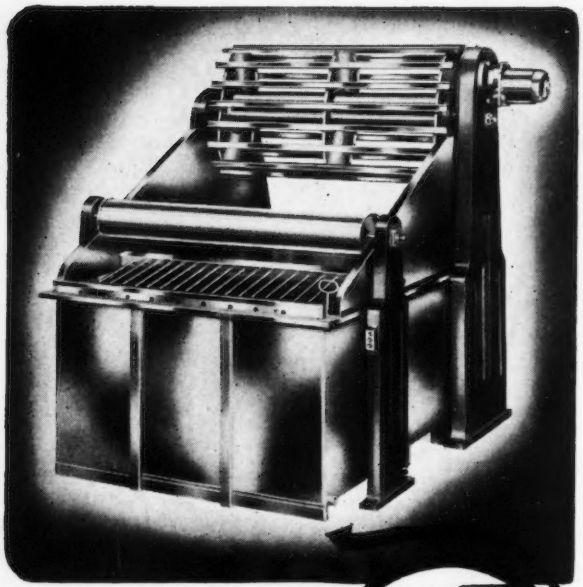
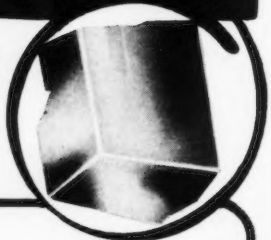


Stainless Steel Dye Boxes for dyeing woolens, worsted, cotton, rayon and mixtures. Plate #7019.

Round corner construction . . . no crevices into which old colors can seep.



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Plan now for BLICKMAN installations after the war—and you'll be certain of meeting tomorrow's competitive market with peak efficiency and production!

For those who now use BLICKMAN stainless steel dye boxes or linings, level dyeing is a matter of a *quick rinse.* Round corners and super-smooth surfaces make it possible to clean the box completely . . . to prevent false shades, discoloration and chaffing.

There'll be no more spotting at time of loading . . . no streaking during dye-operation . . . no stripping or bleaching expense . . . no risk of costly re-dyes *for you* when BLICKMAN stainless steel dyeing equipment is once more readily available!

ARMY E NAVY

ALL ORDERS SUBJECT TO GOVERNMENT PRIORITY REGULATIONS

Send for folder "3 for 5" showing BLICKMAN dyeing equipment for new "highs" in post-war production.

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...KEYED TO TODAY AND TOMORROW

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SOLVAY

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** The Solvay Process Company employs salt, limestone and ammonia to make Soda Ash, from which basic material Caustic Soda and other alkalies are derived.*

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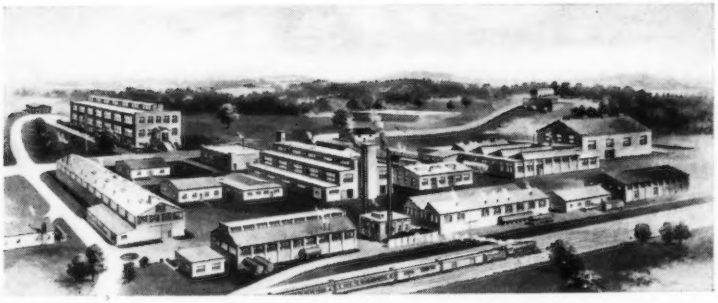

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Enough for a trial run.

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ATCO-RESIN #100—For use in obtaining superior crush resistance
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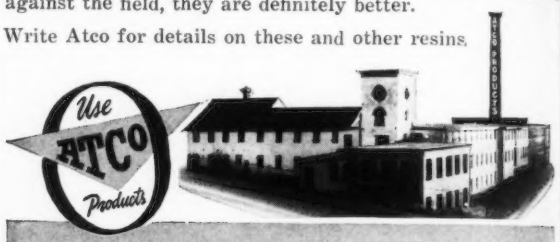
ATCO-RESIN #300—For combined effects plus rapid curing
Atlantic Urea Formaldehyde Resins are not just competing against the field, they are definitely better.

Write Atco for details on these and other resins.



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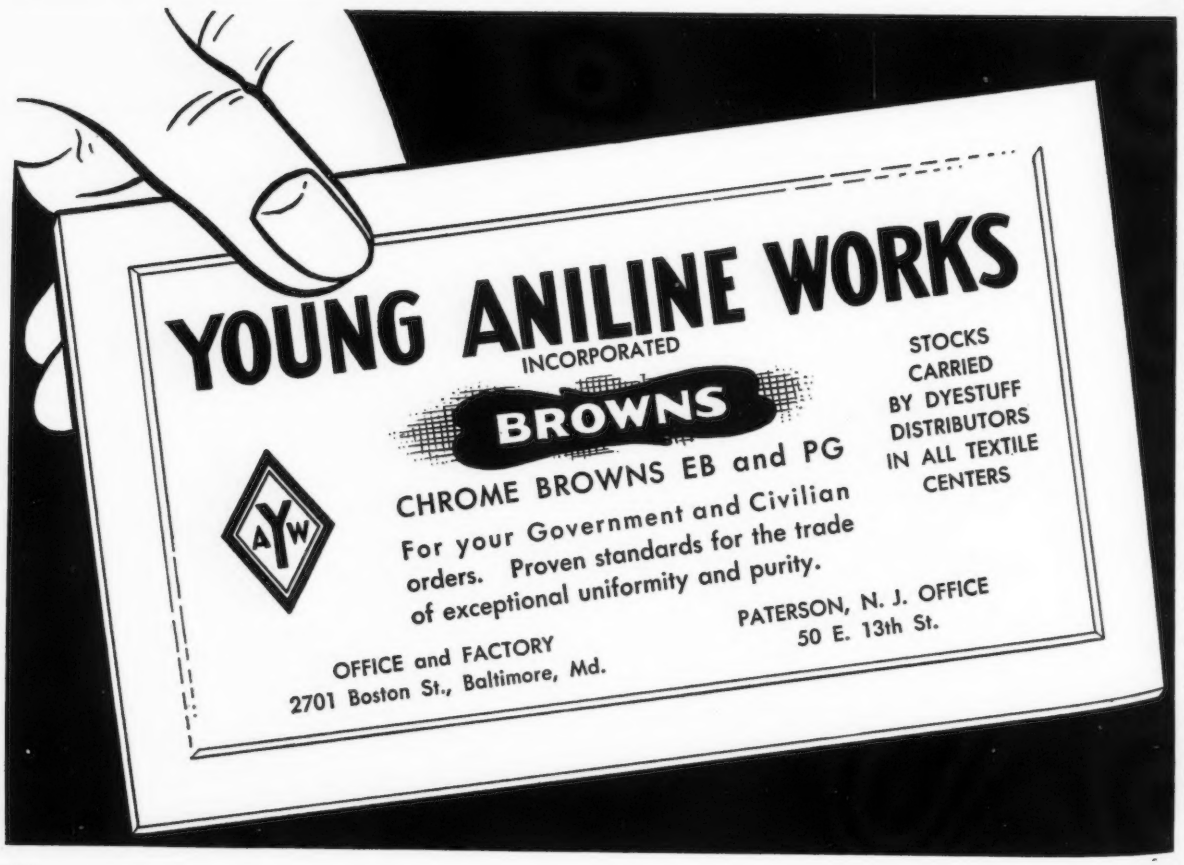
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   EXSIZE desizes starch and starch derivative sized fibres with speed and efficiency, leaving materials soft, elastic and supple.

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   EXSIZE can be used by anyone successfully; easy to use; no elaborate preparation required.

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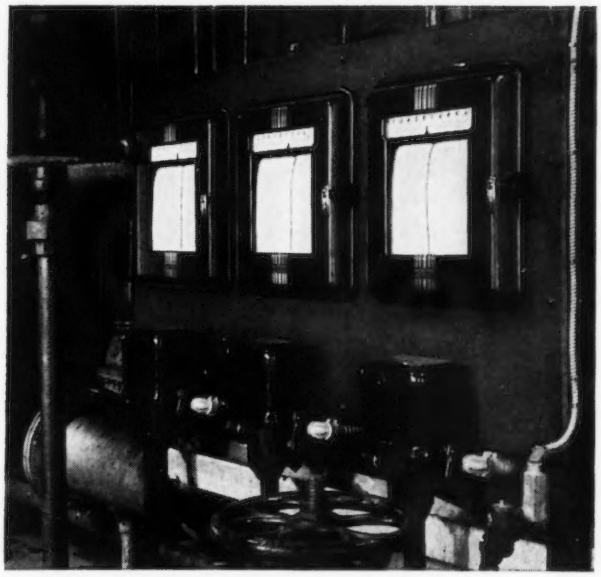

Located in the filter plant of Arkwright Corp., these three Micromax pH Recorders show, left to right, the pH of finished water at the clear well, pH just after alum and filters, pH of water coming into plant.

pH RECORDING PROBLEM SOLVED BY MICROMAX IN ARKWRIGHT PLANT

Typical of many applications of pH data in process control is the use of the three above-pictured Micromax pH Recorders by the Arkwright Corp. in its Finishing Division at Fall River, Mass.

Starting with raw water which varies in pH from 5 to 9, and treating it to slightly above 7 pH, the plant had for years done a good job; but never before did it operate so easily and efficiently as since 1942, when the Micromax Recorders were installed.

These instruments record in great detail on charts 9⅞" wide, with range of 2 to 12 pH, which gives ample working space on both sides of any pH value normally held in an industrial application. They operate alarms if pH exceeds preset limits; they can be equipped at any time as micro-responsive, dependable, fully-automatic controllers.

Electrodes are our modern flow-type glass and calomel units, sturdily made and securely housed in the metal boxes below the Recorders. They receive water by pipe and discharge into a trough for return to raw-water supply.

This equipment is described in Catalog N-96(1) "Micromax pH Recorders," which will be sent on request.

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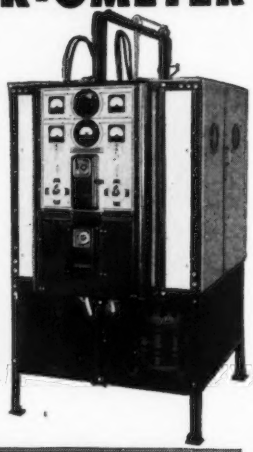

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The success of a naval task force is a tribute to the courage and skill of the men in Navy Blue—traditional color of a proud uniform.

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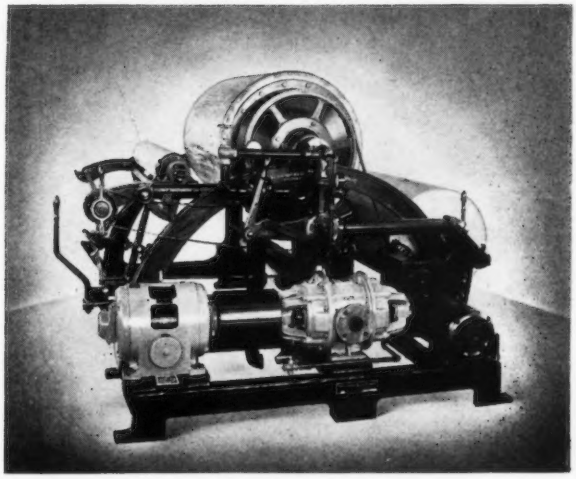

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Manufacturing Chemists for the Textile Industry

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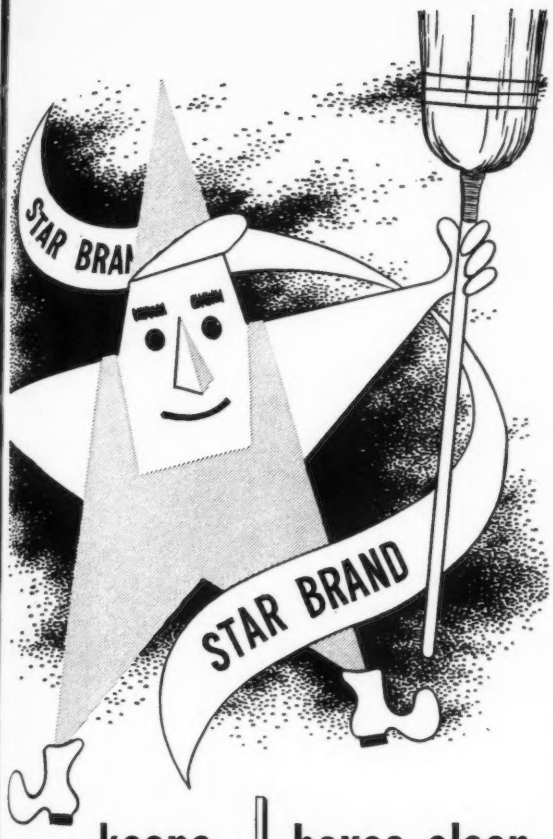
National Aniline Division, Allied Chemical & Dye Corp.	XIV, XV
National Carbon Co., Inc., Carbon Products Division	
National Oil Products Co.	XX
National Starch Products	
New Jersey Zinc Co.	XXI
Nyanza Color & Chemical Co.	XXIX
Onyx Oil & Chemical Co.	V
Pabst Sales Co.	XXXI
Perkins & Son, B. F.	
Philadelphia Quartz Co.	XXXV
Procter & Gamble	
Quaker Chemical Products Corp.	X
Refined Products Co.	XIX
Richmond Oil, Soap & Chemical Co., Inc.	XXX
Rohm & Haas Co.	
Royce Chemical Co.	
Sandoz Chemical Works	
Scholler Bros., Inc.	Third Cover
Socony-Vacuum Oil Co., Inc.	XII
Solvay Sales Corp.	XXVIII, XXXIII
Sonneborn Sons, L.	
Smith, Drum & Co.	
Standard Brands, Inc.	
Standard Chemical Products, Inc.	
Stein, Hall & Co., Inc.	
Sylvania Industrial Corp.	IX
Tennessee Eastman Corp.	
Ultra Chemical Works	XXII
Union Carbide & Carbon Corp.	XVI
Van Vlaanderen Machine Co.	XXXIII
Virginia Smelting Co.	
Warwick Chemical Co.	Second Cover
Wallerstein Co., Inc.	XXXII
Westvaco Chlorine Products Corp.	
Wolf & Co., Jacques	XVIII
Young Aniline Works	XXX
Young Co., J. S.	
Zinsser & Co.	



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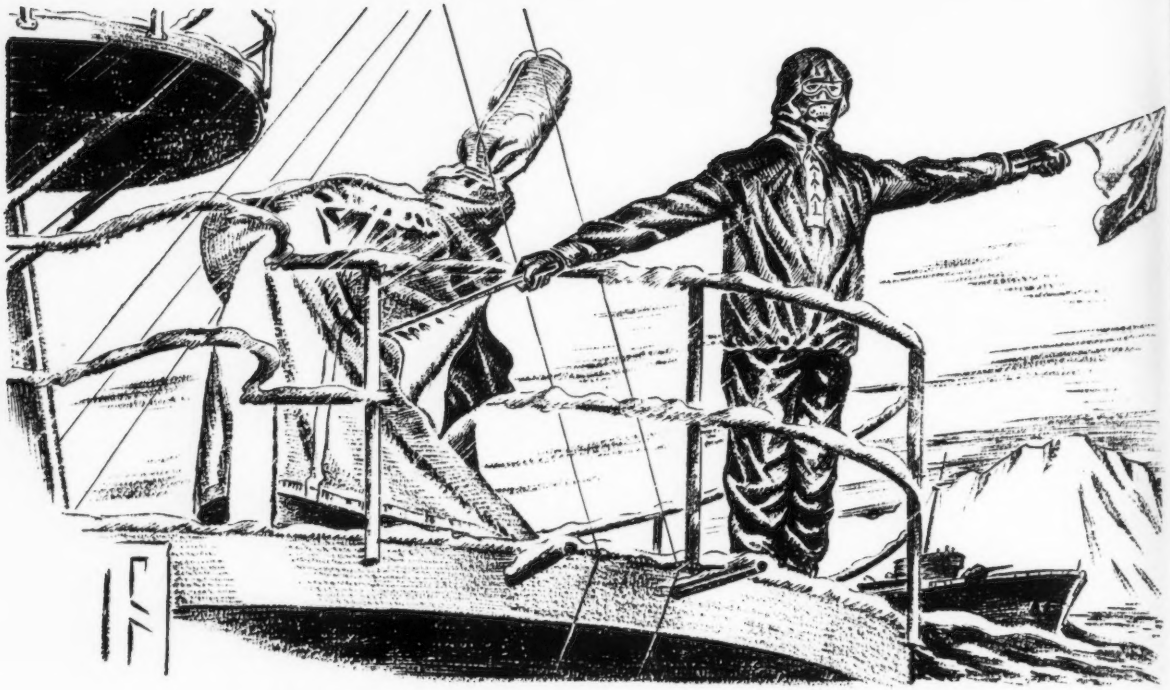

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